# SPECIAL COMMITTEE ON ARTIFICIAL INTELLIGENCE IN A DIGITAL AGE (AIDA)

# Joint AIDA-EMPL Hearing on

# AI and the Labour Market

**Panel I: "Artificial intelligence - challenges and opportunities for the labour market"**
**9h15-10h30**
**Lucia Nicholsonova, Chair of EMPL Committee**

Nicolas Schmit, European Commissioner for Jobs and Social Rights, European Commission

Christina Colclough, Founder, the Why Not Lab

Irene Mandl, Head of Employment Unit, Eurofound

Valerio De Stefano, Professor of Law, Catholic University of Leuven

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**Panel II: "Artificial intelligence and the future of skills"**
**10h30-11h50**
**Dragoş Tudorache, Chair of AIDA Committee**

Ivana Bartoletti, Author of An Artificial Revolution, Editor of the AI Book and Founder, Women Leading in AI network

Christos Tarantilis, Professor at Athens University of Economics and Business, and Member of the Hellenic Parliament

Jens-Henrik Jeppesen, Director, Public Policy - Europe, Middle East & Africa, Workday

Catelijne Muller, President of ALLAI; AI rapporteur for the EESC; (former) member of the High Level Expert Group on AI; member of the OECD network of AI Experts (ONE.AI)

**BRUSSELS**

**TUESDAY 25 MAY 2021**

1-002-0000

**IN THE CHAIR:**
**DRAGOŞ TUDORACHE**
*Chair of the Special Committee on Artificial Intelligence in a Digital Age*

**DURIS NICHOLSONOVA**
*Chair of the Committee on Employment and Social Affairs*

*(The hearing opened at 9.03)*

# 1. Opening remarks

1-004-0000

**Chair.** – Chair, thank you very much for giving me the floor. A lot has been already said from your side, so I will try to be very brief. I'm very happy to be able to discuss this topic – the impact of artificial intelligence on the labour market today – with our expert guests.

As you probably know, the Committee on Employment and Social Affairs has worked on this issue in a series of reports and opinions, such as the resolution on a strong and social Europe for Just Transitions and the EP resolution on a framework of ethical aspects of artificial intelligence, robotics and related technologies. And tomorrow we will discuss another opinion, the opinion on fair working conditions, rights and social protection for platform workers – New forms of employment linked to digital development.

Of course the pandemic has accelerated everything and it brought us teleworking and this illustrates the shifts in the labour market we are already experiencing in connection with digital technologies, including artificial intelligence.

Of course artificial intelligence will impact the labour market in many ways. The profound change will lie in the replacement of entire occupations by technologies, and consequently job losses, but this is only one way to look at it. The other way, that I prefer actually, is that it will also mean creation of new jobs, and this is something we need to get ready for.

So here the task, the key task, is to secure skills responsive to rapid changes in the labour market. The increased need for digital skills, together with the need to constantly adapt and upgrade already acquired skills, will imply the need to reform our education systems, and I am glad that the second panel will look in detail into this issue.

Of course artificial intelligence will have a profound impact on working conditions, health and safety and social protection. But for this we can absolutely rely on the expertise and work of the European Agency for Safety and Health at Work (EU-OSHA) in this field.

And to conclude, we need not only to reform our labour market skills and social policies to adequately react to the consequences of artificial intelligence in the world of work, but we also need to ensure in a broader context that artificial intelligence works for people and for our societies. We can do that by the development and deployment of trustworthy and sustainable artificial policies.

Thank you very much, and now we will listen to all the experts that we have invited to our mission today. Sorry, now it is time to give the floor to the Chair of the Committee on Women's Rights and Gender Equality (FEMM Committee). In fact, it's the Vice-Chair of the FEMM Committee. Please, the floor is yours now.

1-003-0000

**Chair. –** Good morning dear colleagues, welcome to this new hearing of the AIDA Committee, this time in cooperation jointly organised with the Committee on Employment and Social Affairs (EMPL) and in association with the Committee on Women's Rights and Gender Equality (FEMM). So I very much would like to welcome the members of the two committees as well as their Chairs, for joining us this morning.

A few housekeeping rules before we go into the substance of the agenda. We need to adopt the minutes of 15 and 23 April hearings. So unless there are any objections from the AIDA members, I will consider them adopted.

Then language: we have 16 languages today: please make sure you choose your preferred language, selecting the audio channel selector on top of your screen. We have French, German, Italian, Dutch, English, Greek, Estonian, Portuguese, Slovenian, Hungarian, Polish, Slovakian, Slovenian again, Bulgarian, Danish.

So, we have two panels today. The hearing will be organised in two panels. The first panel will be chaired by the EMPL Chair and the second panel will be under the auspices of AIDA.

We have five minutes, as always, for the speakers in each of the panels and then followed by Q&A with the Members: two minutes per question and then two minutes for the answer.

I want to thank our guest speakers for their presence and participation.

Every single one of our AIDA hearings, as you well know, has tackled an important topic, and we always say one is *the* most important topic, but I believe the one today is a special one in our broad analysis of the impact of artificial intelligence on our societies and economies. The labour market is just another way of saying the way our societies function, and this in turn has an effect on all other domains.

If our labour market is prepared for the digital future, we can use technology to tackle pandemics, to fight climate change, to increase our competitiveness, to fend off threats to our societies in our Union. This starts with education and skills. How do we prepare everybody for the digital age? We need basic digital skills for all the citizens of the Union. We need upskilling and re-skilling for those people whose jobs will be transformed by AI and technology, and we need competitive education to prepare our next generations for the digital future. From this I have a number of quick points to make for today's hearing.

First, I am – and remain – a firm believer in the digital transition. While I do understand is that innovative technologies and especially AI are bound to have a transformative impact on the labour market, I do not fear for a second that humans will be left out of work. Quite to the contrary: I believe that AI technology will usher in an era of prosperity with plenty of work and an increasing yield in quality – just like previous industrial revolutions have mutated the labour market for the better.

Indeed, some occupations across the board, from manufacturing to legal or accounting and health services will be challenged. Upskilling and retraining will help people currently in those professions make the best of technology, and education will prepare new workers for the jobs of the future in all of those fields.
Second, education and digital skills, in my view, are not just about preparing for the jobs of the future. They are geopolitical topics. With the rise of novel technology-enabled threats and sophisticated attacks to our democracy and values, education and critical thinking become paramount in a conversation about the future of our world. Democracy, rule of law, human

rights and individual freedoms need to survive and thrive in the transition to a digital economy and society. And they will do so if our labour market is prepared for the challenges of the future.

Third and last, we need to walk the walk, not just talk the talk. The EU's ambition is to be a geopolitical actor and the world's premier regulator when it comes to technology. That is great and definitely important. But countries such as China or the US, when they think about AI, they do not think to establish new boards or national authorities; what they do is pour billions and billions into digital skills, education, research and development. There is no circumventing this. We need to invest massively in education and digital skills and we need to do it in a coordinated manner. It is high time that the Union has increased competences in education and the Conference for the Future of Europe is an opportunity to change this if we are serious about becoming competitive.

So now I would like to give the floor to the Chair of EMPL. Thank you very much for being with us, Ms Lucia Nicholsonova, I give you the floor.

# 2. Panel I: "Artificial intelligence - challenges and opportunities for the labour market"

1-004-5000

**IN THE CHAIR:**
**DURIS NICHOLSONOVA**

**Chair.** – Thank you very much, and now we will listen to all the experts that we have invited to our mission today. Sorry, now it is time to give the floor to the Chair of the Committee on Women's Rights and Gender Equality (FEMM Committee). In fact, it's the Vice-Chair of the FEMM Committee. Please, the floor is yours now.

1-005-0000

**Robert Biedroń (S&D).** – Thank you, Chair, for giving me the opportunity to speak, as you have mentioned, on behalf of the Committee on Women's Rights and Gender Equality (FEMM Committee). I would like to warmly thank our colleagues from the AIDA and the EMPL Committees for organising this very important hearing. Time is exact and it's of unprecedented technological acceleration in our post-COVID world.

This crisis from the perspective of our committee has indeed hurried the arrival of the future of work, and gender parity should be put at the heart of this future, whether in terms of growth and job dynamics, balance of care and careers, equal pay for equal work, inclusive work practices, education and skills, gender gaps.

I would also like to remind you here of the numerous proposals adopted with strong political support by our FEMM Committee within the latest months, or which are in the course of collaboration, and which might be useful in your future work. Among them are: the report on gender equality in science, technology, engineering and mathematics (STEM), education and careers; the opinion on shaping the digital future of Europe; the report on closing the digital gender gap is a very important report, of course; and upcoming reports on pay transparency, equality between women and men, and the Digital Services Act.

As we all know, in many scientific disciplines and professions, women are absent in the artificial intelligence sector, where they represent only 12% of employees. This under-representation of women is one of the key reasons for sexism on algorithms designed and developed by, and in, a male universe.

But it is also an economic issue for our economies and the future of our work. There are one million vacancies in those areas, mainly because of women's low involvement in information and communication technologies. However, at global level recent reports have shown a significant increase in the number of women involved in blockchain technologies and cryptocurrencies, with more and more women mastering new professions, such as investors, traders, analysis developers, journalists and even, and finally, heads of companies.

A window of opportunity has been opened to the public and private sectors by the crisis to tackle the AI gender gap by pursuing two main objectives.

The first one concerns fighting stereotypes which prevent women from choosing and accessing the professions of artificial and digital intelligence, through, inter alia, policies and educational programmes that empower women and girls to seek opportunities in science, technology, engineering and mathematics, and AI gender equality awareness at all levels and firstly in the management of digital companies. But this also concerns boys and men so they understand why prejudices and stereotypes matter.

The second thing concerns creating a general climate that encourages women to remain and make a career in those professions by tackling obligatory sexism in the digital world and the geek culture; also, for instance, by targeting 50% of women in all strategic places of AI development. Women's full involvement in the digital sector is crucial for boosting the EU's economy and labour resilience. It is crucial to let and encourage women to broadly access training and positions in the digital labour market, to eliminate stereotypes that greatly affect algorithms.

We are really looking forward to hearing our experts present today their views and suggestions on those challenges, opportunities and new schemes. We need your expertise and we will use it very much. Thank you for your attention and for organising this very important hearing.

1-006-0000

**Chair.** – Thank you very much. Now it's the right time to welcome all the expert guests who accepted our invitation and who joined our discussion today. So let's look at who's with us.

Of course, we wouldn't be able to discuss anything like that – the impact of artificial intelligence on the labour market – without having Nicolas Schmit with us again. Hello Mr Schmit, the Commissioner for Jobs and Social Rights. Then we have Ms Christina Colclough, the founder of the Why Not Lab and Ms Irene Mandl, the head of the Employment Unit from Eurofound. And we also have Mr Valerio De Stefano, professor at the University of Leuven.

Now, I will give each of you five minutes to take the floor, and then the MEP speakers of the Groups will be given two minutes for the exchange of views. Experts will be invited to respond after each intervention of an MEP. This is based on the request of AIDA. So first, I will give the floor to Mr Nicolas Schmit, the Commissioner for Jobs and Social Rights. The floor is yours now, Commissioner. You have five minutes.

1-007-0000

**Nicolas Schmit,** *Member of the Commission***.** – Thank you very much, Madam Chair. I want first to congratulate the Special Committee on Artificial Intelligence and the Employment Committee for organising this hearing. I think we are facing a major disruption in our economies, in our labour markets. and it is absolutely necessary to reflect on the consequences and how our policies have to be geared to this major disruption.

The deployment of artificial intelligence systems in the real economy and in the world of work has vastly increased in recent years, and there are a lot of dimensions, which have already been mentioned, like also the geopolitical dimension which, in my view, is extremely important. In

the world of work, the use of artificial intelligence first became prominent through its application in platform work, but it is spreading to traditional workplaces as well. Already in 2019, machines were used for employment management *(inaudible)* in 12% of EU companies. Digital technologies have been useful in fighting the COVID pandemic. So far, most discussions around artificial intelligence and labour markets have focused on quantifying how many jobs will be lost and gained. This is very important also in view of its implications for changing skills needs.

Now I think, as in all this kind of major transformations, there a lot of opportunities and there are major challenges. Opportunities: one of them is certainly to improve occupational safety and health by automating dangerous tasks, but also by replacing routine work. On the other hand, the challenges I have already mentioned is the question: how many jobs will be destroyed, how will jobs be transformed, and how can we respond to this transformation.

I share the view, which had been previously expressed, that there is a balance between job destruction and job creation, but the jobs that will be created certainly will be quite different from those being destroyed, and I think we have to reflect on how the new relationship will be organised between the machines on one hand and humans on the other hand. Here the question of skills is obviously absolutely key.

But also there are other challenges, and it has already been mentioned about discrimination. And here, AI systems will only be as good as the data they are trained on: biases in means biases out, and there might be a new rule, a new job finally, a new job for a data hygienist just to verify what kind of data are inside the algorithms. So algorithms are oftentimes described as black boxes due to lack of clarity on how they operate. This affects the understanding of how AI works, what are the implications for workers from the use of AI in the workplace or even how it affects their working conditions. It can also reinforce power imbalances in new forms of work in the platform economy, leaving the workers unable to challenge unfavourable decisions.

This algorithmic opaqueness also brings about a third challenge by creating an accountability gap. AI allows the tracking, this disciplining and setting of expectations for workers without any human supervision. This would not only undermine existing workers' and fundamental rights but also distance employers from decisions taken via algorithms and obscure the attributions of obligations.

Which brings me to the operational conclusions: what the Commission is doing about these challenges. Thanks to the General Data Protection Regulation, we have better guarantees for personal data. The recent Commission proposal for an AI regulation is also very important for algorithmic management challenges. It classifies all employment-related AI systems as high risk, with certain ex-ante requirements for them prior to their placement on the EU market. We are now looking into how the proposed provisions could be complemented and improved after AI systems have already started being used in the world of work. Reflecting on how to address algorithmic management challenges features very prominently in our work on an initiative to improve the working conditions in platform work, and here the transparency of the algorithms is very important.

Just to conclude, we are in a time of big changes due to artificial intelligence. We are only at the beginning of this revolution, and I think one of the big challenges for the labour market is to react swiftly, to invest enormously in skills, and – this has already been said – we need to retrain millions of people for the new jobs or the transformed jobs. I think this is also a big social responsibility in connection to the development of artificial intelligence.

1-008-0000

**Christina Colclough,** *Founder, the Why Not Lab***.** – Thank you Chair, and good morning to all of you. In the below I'll be suggesting six key policy areas, and they reflect very much what Commissioner Schmit has just said. But I think we should start by revisiting history. In 1919, at the end of the First World War in the Treaty of Versailles, world leaders agreed that labour should not be regarded merely as a commodity or article of commerce. This was reconfirmed in 1944 at the end of the Second World War in the Declaration of Philadelphia, now Article 1: 'labour is not a commodity'.

With the millions of data points extracted from workers on a daily basis, turning their actions and non-actions into mathematically-defined truths or statistically calculated probabilities, we must ask: are we betraying history? Whilst digital systems can be effective and can be productive, we must also ask: effective for what? Productive for what? Efficiency and productivity do not necessarily mean good, fair or even legal.

Our industrial relations systems are changing too, not least as a result of the many procured tasks and proprietary software. We are experiencing a changing balance of power in workplaces. As proprietary systems are introduced, their logic, norms, instructions are muddling the traditional labour management relations. We must ask who is really deciding what. Developers of these systems should know what the human rights, social climate and/or economic impacts are, or could be, of their systems – but do they? Deploying managers should too – but do they? And can they unilaterally determine this? And this leads me to my six points.

The first one: whilst the GDPR offers some very strong rights to workers, there are also some profound weaknesses. As pointed out by Professor Sandra Wachter and Brent Mittelstadt, workers – well, indeed, citizens – only have access to influences that are directly related to their own personal data. Yet the majority of influences that influence our lives are not directly related to us. Think of your Netflix recommendations, your Facebook news feeds, or think about why a worker is not called for an interview, despite fulfilling all formal requirements. Maybe he or she or you have fallen victim to an opaque algorithm. We simply need to know. We need much stronger rights in this area.

My second point is to prevent this unabated commodification and quantification of workers. Workers' collective data rights need vastly improving. This relates to the need for much better regulation around data access and control. Workers must have the right to pull the data extracted on them and use it responsibly for the collective's benefit. Research on workers' data trusts or data collectives is urgently needed.

Thirdly, algorithmic systems deployed in workplaces – high risk as they are, as the Commissioner said – simply cannot be governed unilaterally by management. We need to find models for the co-governance of these systems that respect industrial relations and recognise the important role of social dialogue.

And now, if I may, allow me to mention a few words about disruption and skills. Many, and I've also heard this today, like to speak of the future of work as if it essentially is a debate around skills – and here, especially STEM (science, technology, engineering, and mathematics). This is a dangerous reduction of a complex, multifaceted change to work, workers, the social contract and rights. STEM simply cannot stand alone without the humanities. The current debates around AI ethics proves this point.

And fifthly, no system – be it biological, economic or human – can survive if there's not sufficient diversity. The same goes for the labour market. We need workers with all sorts of skills, competences and experiences, and we need a labour market that honours and respects

the labour of workers, no matter if they are in low-valued or high-valued and thus typically low- or high-paid jobs.

In my sixth and final point, I wish to stress that disruption must go hand in hand with obligations. I would urge politicians to look into what these should be. We must commit employers to invest in the competences and career paths of the affected workers up and down supply and value chains.

With the proposals above, we can ensure – through social dialogue, regulation and collective bargaining – diverse and inclusive labour markets for generations to come. It is, to be frank, your responsibility to urgently turn the tide and prevent the irreversible commodification of work and workers.

1-009-0000

**Irene Mandl,** *Head of Employment Unit, Eurofound***.** – Good morning and thank you for the invitation of speaking to you today. Let me start with a reminder that artificial intelligence is generally referred to as a general purpose technology, which in practice means that it hardly ever comes on its own, but in combination with other technologies.

The general concept of artificial intelligence is actually a huge one, but what we are talking about today in practice are the concept of machine learning and deep learning. And this brings about that we have not yet reached the full deployment possibilities of artificial intelligence in the society but also in the labour market, and that has to do with technical limitations but also the market maturity, the business case. But we have seen in the last year a particular acceleration of these developments because of what is happening and the needs that are emerging through COVID-19.

But these are just a few examples of how artificial intelligence is used in practice in the companies, in the workplaces. You have the combination with automation, for example, disinfection – notably now important with the COVID-19 crisis in hospitals, but also for example in customer services like chatbots.

You have it in combination with digitisation, like for example, remote control of factories, of machinery, also self-driving vehicles, like drones or other cars. We see it in training, where it helps, for example, firefighters to pass a difficult situation in a kind of a sheltered situation using virtual and augmented reality. But mostly this task is acquired naturally in the field of data analytics, on the one hand, to improve processes, but also in the field of employee monitoring.

Some data of the European company survey that Eurofound jointly conducted with CEDEFOP shows that in about half of the European establishments, data analytics is used, but again, in half of these enterprises it is used exclusively for process improvement and in the other half it is used in a combination of process improvement and employee monitoring. Which means the share of enterprises that are using data analytics exclusively for employee monitoring is at a lower share of about 5%.

To get back to the broader topic of this panel – the opportunities and the risks that artificially intelligence brings on the labour market – some of them have already been mentioned by previous speakers, but let me give you a brief overview of the comparison of these issues.

So on the one hand is a positive side in terms of opportunities, as we mentioned before, notably as regards data analytics. It has huge potential to bringing business performance improvement and with that, increasing competitiveness, innovation and that also then, of course, related to job creation or job retainment.

Job creation is also triggered by other elements mentioned by previous speakers in terms of new occupations emerging and, regarding that, the last point that you see in that section about workforce upskilling, and the enhancement, the enrichment of the job profile by new and probably more exciting occupations.

We also see in relation to these possibilities that artificial intelligence, with regard to remote working, that we have an enhanced labour market access of specific groups and also an improved HR use, because the algorithmic matching could, if well done, be better than if it is a human that is involved in that.

And as a last point in opportunities, also already touched upon by previous speakers, it has the potential to reduce physical hazards, because automation – the difficult jobs are done by robots, for example – but also there the remote control, that I mentioned before, or preventive actions, to use the data that we have to detect things before they happen.

But this does not come without risk. These remote situations, the possibilities that are offered there, also have the potential that jobs are off-shored to lower-wage countries, meaning job loss in Europe. Another point that is also often discussed is cyber security. We are not sure that the systems are currently still good enough to really make sure that all these data that are available are also safe and cannot be misused for different purposes.

A big point, also mentioned by previous speakers, is management by artificial intelligence, so the black box, the intransparency of the algorithm, which then might also result in some discrimination and bias but also the loss of autonomy and the meaningfulness of the work for the worker affected if they are managed by a machine or if they have less flexibility.

Platformisation of work was mentioned, triggered not only by the platform economy but also spilling over in the traditional economy, where artificial intelligence systems might be used to assign work or make it controlled, and with that also that relates to the exploitation of employee monitoring possibilities, as mentioned before.

So as a last sentence, let me again remind you that artificial intelligence is *(inaudible)* a technology: it's a tool. It's neither good nor bad in itself; it is about how we as humans deploy it, and that requires a good deal of awareness-raising, capacity-building and information provision to politicians, employers and workers. And with my last slide, let me thank you for having had the possibility of talking to you, and I'm looking forward to further discussions.

1-010-0000

**Valerio De Stefano,** *Professor of Law, Catholic University of Leuven***.** – It is a pleasure to be here. I want to concentrate in particular on the recent proposal for a regulation on AI, because I think it is extremely important for the world of work.

And I think this regulation is actually much more than a technical process, it's a constitutional process, because it has the possibility to affect our lives, the lives of our societies, for the next 50 years, without exaggeration. And now, without further ado, I want to detail that, yes, the regulation defines systems that are deployed in the world of work. When they are used, they are enabled by AI as high risk.

But as some of the previous speakers have already mentioned, this is not enough. The proposal is based on the idea of self-assessment of the systems – most of it – and the systems that are now used in the workplace are used to hire people. So they are used in recruitment, and when they do that, they scan curriculum vitaes, for instance, to look for key words and in many cases

they are biased, and even the biggest players in the market had to withdraw some of these systems because they were biased and it was impossible to fix the bias.

The other thing that these instruments are used for at the moment, much more than for automating jobs, is for surveilling and monitoring people at work. This is the trend that we have seen. So they monitor workers with AI that counts the keystrokes that they give when they work on their computer. They monitored the browsing activity to report to managers whether they have visited certain sites or not, or how many keystrokes they give to the keyboard, how many mouse movements they have given. Some instruments also use video cameras to monitor whether people are at their position or not, or they used GPS in warehouses, for instance, to constantly monitor how people move.

This is something that has nothing to do with liberating people. This is actually an experiment in mass surveillance that is already spreading in our workplaces, and we should be doing something about it. The regulation does not do enough on this, and instead it allows the possibility of tracking the emotions of people and therefore also workers, which is another thing that we see is coming to our workplaces. And the only thing that it says is that people should be informed when their emotions are tracked. Emotion tracking is basically snake oil. Every neuroscientist, every senior neuroscientist will tell you that it is impossible for artificial intelligence to track emotions, and still the regulation doesn't ban this very worrisome practice.

Another thing that is particularly important is that there is no specific protection for the managers who refuse to go with a suggestion that comes from the AI system. So there is something about keeping human in the loop, but when it comes to the workplaces, there is nothing to protect the managers that don't want to implement a decision that AI is suggesting.

A last word of caution on the legal basis of this regulation. At the moment the legal basis is Article 114, so it's a liberalisation legal basis, and it is not by chance that the regulation was assigned then to the Committee on the Internal Market and Consumer Protection (IMCO).

I think when it comes to the world of work, we will need to have a specific, separate legal instrument that is based on the social chapter. The liberalisation legal basis is not enough to enhance protection, and instead, the regulation adopted on this legal basis risks becoming the ceiling of protection, not the floor, because any additional protection at the national level, whether pre-existing, such as for instance the co-determination regulation that obliges companies to consult with the unions and to negotiate with the unions when they want to introduce new technology, or additional protection, such as the one that Spain has just approved to give algorithmic transparency: all of this risks to be considered incompatible with the regulation because it is excessive to the regulation – it's on top of the protection that the regulation affords. When you have a liberalisation legal basis, this is the risk there. So I'm very happy to be here with you to discuss all these problems and to take questions during the discussion.

1-011-0000

**Miriam Lexmann (PPE).** – Thank you for organising this exchange of views on a very important topic, the potential challenges and opportunities AI brings for our labour market. Artificial intelligence changes every aspect of our lives and although most of us are already using it on a daily basis and consider it as being a help with our daily tasks, the labour market is an area in which AI causes concern.

People are afraid of structural changes and challenges that might substitute many lower-qualified routine jobs, but they are also afraid of possible discrimination in recruitment processes. This fear is not unreasonable because, as we all know, biased algorithms can use and cause discrimination and damage.

In our last vote many colleagues were in favour of the prohibition of AI use in recruitment processes. However, AI is already being used in this area. For example EPSO uses it to screen thousands of CVs in order to select the ones with the desired keywords. That is why we should look into our approach and legislation in a realistic manner, trying to improve what is already being used and make sure AI is being used in a human-centric and bias based on ethical values, with transparency as its key principle to avoid biased algorithms.

Therefore, my question is simple. How are we going to ensure that the future legislation and EU approach towards AI is flexible and seeks to embrace the current practices instead of attempting to go backwards and prohibit what is already in use?

In this context, is AIDA going to open a wider discussion on the use of AI in employment-related processes in order to grant the highest level possible of transparency and avoid biases?

1-012-0000
**Chair.** – Okay, Ms Lexmann, who are you addressing with your question? I think it might be Commissioner Schmit, but maybe you have another expert in mind?

1-013-0000
**Miriam Lexmann (PPE).** – Yes, thank you very much. It was mainly to Commissioner Schmit.

1-014-0000
**Chair.** – Okay, thank you so much, I thought so. Commissioner Schmit, now the floor is yours for the answer. Please be very brief.

1-015-0000
**Nicolas Schmit,** *Member of the Commission***.** – Yes, well I fully agree with what has just been said and I think that the issue is, will we be able to build a human-centric artificial intelligence system? And we know that we are here in a world where different systems are competing. I just heard this morning what the Chinese are doing in this area, how they are using precisely AI to have total control of their society. And this is not the European model I think, and therefore it's extremely important, and I refer to what has been said previously by Professor De Stefano, I think we are only at the beginning of shaping the AI systems and certainly what has been done in the regulation on AI may not cover essential parts of our social life.

Therefore, I think the point is that our Treaties are not really covering also this new dimension of the world of work and therefore, maybe, when we are talking about the future of Europe we should refer also to this new dimension. I think that certainly recruitment, control, monitoring, they are essential elements which have to be limited or even sometimes prohibited. And here we need European regulations and we have to establish a new model for how we use artificial intelligence.

1-016-0000
**Estrella Durá Ferrandis (S&D).** – Really, there is no doubt that we are in an era of automation and artificial intelligence. The pandemic has only increased the use of digital tools and sped up the transformation of our social model and labour market.

Yes, there are benefits, but there are also countless risks requiring intervention and regulation. I would like to stress that training- and skills acquisition-based instruments are not enough. Digitalisation is generating new models that call not only for adaptation but above all legislation: legislation that protects workers and fosters the creation of stable and high-quality jobs. We need to be very clear that innovation and progress cannot be synonyms for employment insecurity and social decline, as seems to be happening now.

We are witnessing the clear destabilisation of the labour market and connection problems: people are hyperconnected, monitored and controlled by means of new automation mechanisms, as we have mentioned, that lead to psychosocial risks and affect mental health. Workers are therefore unprotected, with no balance between their private and professional lives, governed by digital automatised tools that take random and unjustified decisions. So this legislation needs to be transformed to address this new reality.

My questions are, therefore, specifically for the Commissioner. It is true that the new legal framework for artificial intelligence is intended to promote excellence, trust and ethics, but I am concerned about the lack of specific proposals for fair and high-quality jobs. So, Commissioner, what measures have been planned to improve job quality in this digital context? Secondly, how does the Commission intend to step up the protection of workers in this new initiative? I am thinking specifically of the algorithms which, as you mentioned, are considered to be high-risk artificial intelligence systems. We need to go further regarding their transparency. They need to be regulated in this regard. Have any specific proposals been prepared?

1-017-0000

**Nicolas Schmit,** *Member of the Commission***.** – Well, I think we are working now on a new regulation on platforms, and I think this is one of the key aspects here. It's not just about working conditions, labour rights; it is also about protecting people's data, limiting the control by algorithms on people. And I agree with you that here we need very clear – I said it already – clear regulation.

So the first proposal which would come on this area, and which will cover also in a broad sense the working conditions – and I consider that protecting the personal data of people is part of their working conditions – will be the regulation of platforms. This will be a very important proposal by the Commission, and it will come by the end of this year. So I think that meetings or a hearing like yours today is very useful also to work on this proposal.

1-018-0000

**Svenja Hahn (Renew).** – Thank you very much Chair, and thank you very much for all the guests joining us today and for your very valuable input. My question actually is going to Commissioner Schmit as well.

I'm very happy that we're discussing the important topic of challenges and opportunities of artificial intelligence for the labour market today, because in our special committee, we formed it to discuss a long-term perspective for the European approach towards AI, and one of the very crucial aspects is in regard to the potential disruptive forces for the future of work. As we heard from some colleagues, artificial intelligence is seen as a threat to the labour market, but for my Group – Renew Europe – it's clear we have to tackle the challenges of new technologies for workers. But also they will bring huge opportunities for our whole society, in the labour market in particular.

But it's for us lawmakers to pave the right way and to embrace the chances, and we want artificial intelligence to contribute to our well-being, to assist workers and to make work better. We can make the best out of new technologies if we ensure high-quality upskilling of our workers and digital education from an early age on. And if we want Europe to be innovative, competitive and human-centric, then education and skills are the key.

And both labour market and education policy are Member State competences. However, I believe there's room for coordination of policies in order to advance together throughout the whole of Europe. So my questions are going in that direction, Mr Commissioner.

Which coordinated approach to digital upskilling of workforce in Europe does the Commission plan to take, and where do you see the most urgent need for action making workers fit for the labour market in a digital age, and how do you plan to balance that out with the Member States?

1-019-0000

**Nicolas Schmit,** *Member of the Commission***.** – Thank you very much. Obviously, I think we need a comprehensive approach. We have discussed a lot on the risks and the challenges and we also have to look at the opportunities, and certainly I'm also convinced that the technological development through digitalisation, through the development of artificial intelligence, gives us a lot of opportunities.

Anyway, I think Europe should not be left behind in this development, because Europe's economy is largely depending on that. To be successful here, we have to invest first a lot in research and development, in our industrial capacity around artificial intelligence, and third, a lot in our skills.

And here, certainly, we need a coordinated approach, and that's one aspect we have launched. Now this has to be done, certainly, with education providers, skill providers, but especially also with companies, because those who are using the skills are the companies, and therefore we have launched, together with Commissioner Breton, the skills pact, where we are analysing what are the needs, what kind of skills people should have to adapt to this new technological framework. And I think this is the coordinated approach we need. And then having a strong link to skills providers, to our educational systems, to investment, because this means, as I have said in my introduction, millions of people have to be reskilled, and this means a high amount of investment.

Therefore, when we are talking about recovery funds, part of this recovery fund has to be used also for reskilling and upskilling people, especially also young people, who have to be oriented towards the new technologies, towards the use of artificial intelligence. So I think this is a comprehensive approach which Europe is pushing for, together with Member States, together with the enterprises, together with education systems.

1-020-0000

**Alessandro Panza (ID).** – Thank you, Chair. Before starting, I would like to take a minute to remember the 14 victims of last Sunday's tragedy in the mountains of Piedmont, and to send a hug to little Eitan, who is still fighting for his life. Sorry, but I had to do this right now, even if it has nothing to do with the subject at hand.

Now, let's get back to artificial intelligence. I have to say that I very much appreciated Mr De Stefano's statement. You, Mr Chair, earlier on mentioned the other guests – who, in my view, together with Ms Mandl, have identified two very important aspects relating to worker protection. There is no point in pretending that artificial intelligence, in the future, will not be part of our lives in an increasingly major way from now on, and it is therefore important that we approach it in the right way.

But we must also be aware that Europe is equipping itself to regulate everything that is artificial intelligence. Unfortunately, however, the real – technical – management of artificial intelligence lies outside Europe. First, the Commissioner mentioned China. We know how China's approach to certain issues, especially from the point of view of protecting workers, is very far removed from what we have here.

Now let me come to the questions – very simple ones. Here too, I'm sorry, but I agree with the Commissioner. As regards protection, not only of workers but of those workers who will be superseded by artificial intelligence – I am thinking here of the 50-60 year-olds who will not have the time to do the training – I hope that the Commission will put in place a mechanism

that synchronises the exit of these workers with the entry of newly trained workers, so that there is not too much inequality and hardship.

And as regards training, let us not forget that high-level training is needed for AI and so let us make sure there is not inequality here, too, whereby those who previously did not have a high level of training could in some way make up for it through low-skilled jobs. Today, with artificial intelligence, this is genuinely more difficult.

1-021-0000

**Nicolas Schmit,** *Member of the Commission***.** – Well, I understand that this is a big challenge, when automation is replacing a certain number of workers. But here I would say that you do not start training people when really the problem comes up. And here I think that the right way is to anticipate and to organise lifelong learning, because you have to anticipate people's careers and you have now – as we know what kind of steps will come through automation – you have also to prepare the preparation of people to change their jobs. So I think this is the meaning of lifelong learning. That's the first thing.

The second one is that we should not – I agree with that – leave just people in their early 50s or late 50s whatsoever on the side of the road, and here we have to create jobs. And I think there are a lot of jobs which can be created in the society to give them the opportunities, and these can be very valuable jobs. So we should not accept structural unemployment due to automation.

So this is a new active labour market policy which we have to put into place, especially also after the Covid crisis. And the Commission has already started to reflect on such an active labour market policy through a recommendation we made recently, which is called EASE.

Now a last point is that artificial intelligence will not just skip or destroy low-skilled work. Even there might be a polarisation between high-skilled, very high-skilled and very low-skilled. So I think this is another issue: the polarisation of the labour market due to automation. And this means also that the low-skilled should be upskilled, but also that this kind of job should be valued and should be recognised also in our society.

So this is a reflection on how the labour market works, but also wage setting is working and solidarity. Because AI has a distributional effect on wages, on income, and this is something we also have to integrate into our reflection. There are those who think that, well, we should have some kind of unconditional income. But I think that the distributional or re-distributional effect of this technological change and transformation should be high on our agenda.

1-022-0000

**Kim Van Sparrentak (Verts/ALE).** – I have a question for Ms Colclough and Mr De Stefano. We increasingly discuss how AI and technological developments might take over jobs in the future, but what is often overlooked is that instead of taking over work from humans, AI on the work floor is currently used to transform employees into living robots already. AI and work is not just a question of the future of work but of ensuring health and safety on the work floor now.

We see that in the name of efficiency and productivity AI on the work floor can lead to total surveillance of workers, leading to excessive pressure and stress. Examples vary from extreme time management and the exact monitoring of the time spent on tasks or away from tasks, including bathroom breaks, to constant real-time live location tracking. Online platforms such as Uber track workers' behaviour, such as logging off when they feel prices are too low, and punish them with less rights offered or lower pricing.

Other examples include facial recognition and installing tracking software in workers' computers to monitor their activity, where their eyes are focused, and sometimes even keeping

track of workers' emotions. Recently drivers won a lawsuit against Uber because it seems the algorithm fired them without any human intervention.

These are just disastrous developments in the social field that we urgently need to protect workers against. What concrete policy action do you feel is necessary in this area and how can we tackle this in the presented AI legislation and to what extent do we need new European health and safety rules or workers' rights to protect workers from these developments?

1-023-0000

**Christina Colclough,** *Founder, the Why Not Lab***.** – Thank you for that wonderful question MEP Van Sparrentak. So there are several things here and I've mentioned some of them. I mean this super surveillance is the commodification or the objectification of workers' rights and it should absolutely be regulated and I think the Commissioner and Professor De Stefano mentioned that we have got to be really careful, that the AI act now, which is proposed to be self-regulation by the employers, is simply not enough.

What we need to do on the workers' side though is very much fight for much better workers' data rights. Number one, there should be transparency in companies around what digital technologies they are actually deploying. I think the cities of Helsinki and Amsterdam were going forward here by actually creating a transparency register. So that is number one. A lot of the workers I speak to, they simply do not know what digital systems are in place in their companies. So that's the first step.

The second step is to improve the workers' data rights and simply be able to say that there are certain forms of surveillance which we will not accept. We must have right of access to the data. You were mentioning the examples from Uber and the likes of the Amazon warehouses and so on. It's a very unbalanced world of work we are living in right now, where those who have the data are determining so many things without any right of redress or refute from the workers. So that's number two.

Number three, we need to know what's happening with this data. I think Shoshana Zuboff, who I know has spoken a lot to the Commission, wants to ban markets in human futures, and these are the markets in these influences I was talking about. This too, I think we should really aim for.

And I understand the geopolitical situation here but Europe really took the lead across the world in data protection and I'm sure can take the lead also in the regulation of artificial intelligence so all of the words of good intent, 'from people to planet before profit' and 'human in the loop', 'human in command', actually are actualised. So those are the points I would mention very briefly here.

1-024-0000

**Valerio De Stefano,** *Professor of Law, Catholic University of Leuven***.** – Thank you Chair, and thank you for the question. I think this is a crucial one, and I want to stress – and I can't stress enough – that announced surveillance and monitoring on people is not bringing us anywhere. This is not the AI we want. AI can have wonderful implications for society, can be used for many things in the medical sector, in the environmental sector. Monitoring workers for how long they go to the restroom is not a good use of AI. It's not the right use of AI and it doesn't lead Europe anywhere. And this is, unfortunately, some of the technologies that we have seen, is exactly to announce this monitoring and surveillance.

Now in my opinion, what we can do about it is something that also that Doctor Colclough just mentioned: reintroduce the human in the loop and in the workplace. That also means giving power to workers and workers' representatives. Algorithms are crucial tools. They should be negotiated upon. It cannot be just a unilateral decision of firms to introduce these mechanisms

at the workplace. This is why we have co-determination regulation, which is also why we have collective bargaining.

So all these instruments need to be regulated and can be regulated at the workplace level, at the sectoral level, in a very flexible way, with collective bargaining, to decide what we want in the workplace and what we want to leave out of the workplace.

Now of course, you will have a need for a legislative framework to announce this workers' right, but what we already have, the instruments that we already have – information and consultation and collective bargaining – are going to be crucial in this field.

1-025-0000

**Elżbieta Rafalska (ECR).** Madam Chair, I should like to thank the experts and the Commissioner very much for what was truly, in my opinion, an exceptionally captivating presentation. However, I must also say that, following these presentations, the risks that I was thinking about seem even greater, as I have the impression that until now we have mainly been fascinated by the benefits of AI, as has indeed undoubtedly been the case. Who among us does not benefit from it, and who has not experienced, for instance, their GPS leading them down the wrong road, or, as has happened to me, straight into a head-on collision?

I should like to address my questions to the founder of Why Not Lab and to Professor De Stefano. The Commissioner is almost always present for the Committee, and we can always put our questions to him. My questions relate mainly to the recruitment process (which the Professor discussed). What role should AI play in the recruitment process? The example was given of a US firm which used this tool, but which abandoned it for certain reasons. How should a balance be struck between the effectiveness of technological progress on the one hand, and privacy and ethics on the other. I think that this is the most significant problem. How can it be ensured that the use of AI in the recruitment process does not create or deepen discriminatory practices? How do you interpret the future of AI on the labour market? We have already said a lot about these threats. What is the key to ensuring that AI and emerging technologies can coexist with workers?

I would like to return once again to emotion tracking and to what the Professor said, namely that there are no managers who will oppose decisions taken by AI. If this really is the case, then that is an insane and dangerous vision.

1-026-0000

**Valerio De Stefano,** *Professor of Law, Catholic University of Leuven***.** – Thank you Chair, and thank you for these very important questions as well.

So, on discrimination in hiring processes: it is going to be important that these systems are vetted – constantly monitored – and also that we tell the programmers what they have to do and what kind of discrimination they need to tackle, and what and how we want to root it out. It is not going to happen just by a miracle. Again, the proposal for a regulation says a lot of words about discrimination, but no specific direction on the need to remove discrimination and the ways to do it. This is something that needs to come from legislation. It cannot just be left to the developers.

As to emotional tracking, emotional trucking is basically a new sector that is expanding massively, and when it comes to the world of work, it is used, for instance, during job interviews, to see whether someone is lying during a job interview, and it is being used during meetings to see whether somebody is paying attention or not, whether somebody is attentive to their task or not.

It is extremely important to say that emotional tracking is unreliable. It is not scientifically sound, and also it is extremely discriminatory, because it doesn't take into account the diversity of facial emotions of people that are not Caucasian.

So these are extremely important risks that need to be tackled, and the current proposal for a regulation does not do nearly enough to rule out these risks.

1-027-0000
**Nicolas Schmit,** *Member of the Commission***.** – I would say, on emotional tracking in the world of work, it should be banned. Just like that. I'm very clear. It should be banned for the reasons which have been explained by Professor De Stefano.

And the first one on discrimination and in the context of hiring processes, I fully agree this should be, when applied, then applied with a lot of guarantees of monitoring, and as I said, AI systems will only be as good as the data they are trained on. It's like garbage in, garbage out; biases in, biases out. And here I think we have to have very clear monitoring.

I've mentioned that there's this new function of data hygienist which should precisely check if the data which are in are not biased. So yes, I would not exclude the application of AI in this context, but then with very clear rules and very clear limits also in that context.

1-028-0000
**Sandra Pereira (The Left).** – Madam President, I would also like to thank those who have spoken for their contribution to this very important debate on the impact of scientific advances on workers' lives.

Artificial intelligence and robotics undoubtedly help to increase productivity which, in turn, creates the conditions for real wage growth and better living standards, but this potential is constantly being undermined in capitalist society in favour of protecting and increasing profits. We therefore need to be clearer in our positions. Do we want science and technology's potential to benefit progress and social justice or, on the contrary, to serve solely for a minority to exploit it and to accumulate profit? Workers' rights and scientific advances are allies, not enemies, even if employers very often use scientific advances as a tool for pressure and blackmail.
Artificial intelligence must go hand in hand with shorter working hours, eradicating job insecurity and making jobs less arduous without workers losing income as a result. I would like to hear the Commissioner's view on this.

My second question concerns the limits which, as far as we understand, should exist as regards the applicability of artificial intelligence, specifically whether information is used to take decisions on individuals. If, for example, we are talking about precisely recording human gestures, specifically in workers' interaction with interfaces, which, in our view, should be banned in labour codes, as workers' gesture should be covered under privacy rules. I would like to hear Ms Colclough's and Mr De Stefano's view on this.

Lastly, if workers' and people's interests are not taken into account and technology is used as a mechanism for oppression and exploitation, now, as in other times in history, it will be through struggle that the liberating potential of technology is revealed.

1-029-0000
**Nicolas Schmit,** *Member of the Commission***.** – I agree with the conclusion that, certainly, we have to have this human-centric approach. There's one important issue. While this platform is *(inaudible)* of our economy through algorithms and artificial intelligence, what is the role of social dialogue in there? And I think it is extremely key that we restore social dialogue, we restore collective bargaining – the Commission is working on how, especially with platforms, we have this possibility of collective bargaining.

About productivity. You know, normally if productivity is increased, wages should also be increased, and this is very much related to the level of social dialogue and of the balance of power in the new economy.

And my last remark is on the burden of work. Yes, we have to rethink health and safety in the context of these technological changes, and probably we have to enlarge our ideas about health and safety in this context. And the right to disconnect may be one of the elements, but there are others.

1-030-0000

**Christina Colclough,** *Founder, the Why Not Lab***.** – Thank you Chair. I just want to say that I think this whole narrative around productivity is something we should look into. There's actually no proof that artificial intelligence is increasing productivity. The OECD has lots of research on that and so on. And then you must ask, as I said before: productive for what? The system can be very efficient, but is it actually increasing productivity?

I think, on the notion of whether certain systems should be banned: yes, and I think Valerio De Stefano has argued very well for that, and so has the Commission.

I then just wish to add one last point, and that is that we have this modification, this objectification, going on, and this is where we need to focus on the workers' collective data rights: not just protection, but the rights, and therefore the transparency and obligations of the employers.

1-031-0000

**Valerio De Stefano,** *Professor of Law, Catholic University of Leuven***.** –Thanks for the question. I think I don't have anything to add to what the Commissioner and Doctor Colclough just said, but I think the EMPL Committee should be at the forefront of commenting on the current proposal for the regulation and DG EMPL for the Commission should also do their part. This current proposal is not nearly enough, as I said, and we cannot expect IMCO to improve on it when it comes to workers' rights. So this is something that EMPL will have to take on itself to claim back the competence when it comes to the labour market.

1-032-0000

**Daniela Rondinelli (NI).** – Thank you, Chair. Good morning to you all, good morning to the Commissioner. In 2016, Stephen Hawking said that artificial intelligence would be the best or worst thing for the future of humanity. So I believe that we need to reap the benefits of this technology, but we need to govern these processes all together: we as policy makers, but also the whole of civil society, the social partners, academics and businesses. So today's hearing is very important, because artificial intelligence, as Commissioner Schmit said earlier on, and I endorse, must have a human-centric model of development, i.e. it must be humans who both inspire and benefit from these revolutionary processes.

I have two questions for Professor De Stefano. First of all, I wanted to ask him whether, according to his studies, we will move towards a polarisation of the labour market, i.e. we will have new types of jobs that will be affected by artificial intelligence, but we will also have great pockets of workers who will not be able to retrain from this point of view. So I wanted to ask you whether, in your opinion, we will be moving towards a situation where we will have working poor, precisely from the point of view of artificial intelligence skills.

The other question I wanted to ask you concerns occupational retraining. This will be the challenge for Europe in the coming years – an inevitable challenge – and so we will certainly have to legislate on new rights. You referred to collective bargaining as something that already exists and will need to be developed, but I believe, on the other hand, that collective bargaining from this point of view will die, and we have seen it... (*the Chair cut off the speaker)*

1-033-0000
**Valerio De Stefano,** *Professor of Law, Catholic University of Leuven***.** – So on employment, as Commissioner Schmit was saying, it is very important that we reason about the question of unemployment benefits and of re-skilling for people whose job is being automated and also to reflect about the conditionality of our current welfare system.

So we should investigate how to make our welfare system more universal, discuss the question of basic income – this is going to be very important in the future – but the most urgent thing is to re-discuss the current conditionality on our welfare system because many of our welfare systems are based on the assumption of full employment, which is already an unrealistic assumption. So this should prompt us to reflect more on that.

And on the new rights: yes, I'm all in favour of new rights but I think that collective bargaining is still going to be extremely important for adding a tailored regulation to the sector and to the workplace. There is nothing better at the moment that we can imagine than this.

1-034-0000
**Stelios Kympouropoulos (PPE).** – Thank you Chair, Commissioner Schmit, dear colleagues, I wanted to thank all the speakers for their very comprehensive presentations. AI is indeed creating incredible opportunities and alternatives for our labour markets. Innovation cycles are much faster than in the past with product markets and businesses conforming very rapidly.

This is a significant challenge for our public administration, universities, etc. At the same time AI can also give a great insight and the ability to analyse vast troves of data. And as digital automation is expected to have differential effects on different sectors of the economy, we need to be able to anticipate these developments in order to adjust our education and labour policies. This is a crucial element as we lawmakers are confronted with a multitude of diverging analyses and methodologies on the number of impacted jobs, overall net job losses but also the timescale of these changes. I would therefore like to ask Commissioner on which methodology and estimates of risk of job automation does the Commission base its policies?

Colleagues, before concluding, I wanted to underline my conviction that AI should work for people and should be a force for good in society. In this regard, I believe it is fundamental to address concerns related to the increase of inequalities among workers and companies, job polarisation, and the risk of further decline of middle-skilled jobs. And we should use all the available instruments to incentivise companies such as SMEs to increase uptake of AI in order to retain the backbone of our societies' competitive edge.

1-035-0000
**Nicolas Schmit,** *Member of the Commission***.** – I would say that we are certainly not against automation, because I think this is key for the competitiveness of our economy. And by the way, automation may be also a positive element in terms of workload, in terms of repetitive work and so on. But what is important is that we redefine the relationship between the human and the machine, and that's all about the rights we have discussed here.

I think this is the European model we should establish, based on rights. And on the other hand, I think that certainly we have to shape the labour market changed by artificial intelligence. The approach, which is important, is the political approach we have towards this transformation, and I do not believe in self-regulation.

I say it very clearly. This is a deep transformation which needs regulation, which needs a clear framework, and I think Europe should here have a leadership role, and I'm sure that, because what is at stake at the end is our democracy, it's values, and here I think Europe has a role to play.

1-036-0000
**Brando Benifei (S&D).** – Thank you, Chair, thank you to the speakers for the great amount of information provided during the panel, which is certainly very useful for our work.

I will try to point out a few more things, because many issues have already been addressed, but I want to state clearly that the increasing use of teleworking has led to the emergence of new trends during the pandemic.

For example, the issue of systems for monitoring workers' performance, which record not only the time spent in front of the screen, but also their mood while they are performing tasks, using facial or voice recognition systems. This kind of use is misleading, based on non-scientific theories, and in this regard I think the words of Commissioner Schmit, who I have just heard discuss this matter, are important, in that they appear to reflect a similar negative assessment.

Moreover, this type of monitoring often takes place without the worker's consent, even without his knowledge, which is a violation of that worker's rights and dignity. Considering this kind of system to be legitimate, without any prior discussion, is liable to lead to serious consequences for the rights of European workers and is at odds with national systems.

I would therefore like to ask Professor De Stefano, who has already mentioned some things relating to this issue, how he thinks this type of situation can best be resolved in a legislative text and whether it would not be appropriate to include the requirement to obtain a worker's consent or, failing that, a provision stating that the worker will not suffer from any repercussions in the event of refusal. Lastly, how should an active role be strengthened for trade unions involved in bargaining, and employees themselves, when it comes to negotiating these practices and algorithms?

1-037-0000
**Valerio De Stefano,** *Professor of Law, Catholic University of Leuven***.** –Thank you Chair, and thank you to the MEP. Yes, I think it is going to be crucial to imagine a new set of rights, and again, I cannot stress this enough: without remaking the wheel, some of these things can also be implemented through collective bargaining.

It is crucial that standards and legislation decide what we want to have in our workplaces and what practices instead should be banned. I want to stress this. Not all the uses of technology should be possible just because they are technically feasible. The legislation is there to allow a better use, a use that is fair and equitable, and again, self-regulation is not going to be enough on that.

So yes, MEP: I see a big role for legislation in this field. I see a role of Europe to guide the development of fair and equitable AI and to exclude from the workplaces the most inequitable and invasive practices.

1-038-0000
**Atidzhe Alieva-Veli (Renew).** – Chair, dear colleagues, I wish to thank the experts for sharing their interesting points of view. There can be no doubt that artificial intelligence will have a serious long-term impact on the labour market. This kind of intelligence has a key role as it is a strategic technology that can generate growth, innovation and efficiency.

In this connection, I would like to ask our experts how will we prepare workers, as well as jobseekers, for rapid technological change and how will we ensure the competitiveness of EU workers and, of course, of businesses? What education and upskilling and reskilling would be most appropriate for the development of skills for working in the field of artificial intelligence? And a no less important question: is it already possible for workers to receive suitable information and guidelines on already-existing training in that direction?

My other question has already been raised repeatedly and relates to worker's rights. How can we guarantee that these will not be violated when workers are hired and when they are performing their duties?

1-039-0000
**Irene Mandl,** *Head of Employment Unit, Eurofound***.** – Thank you for that. We have been talking a lot about the digital skills, very specific for artificial intelligence, but I think this last question brought about the point that the new skills that will be needed in the future go beyond that. It's also about training people in terms of adaptability because of the dynamism of the developments related to the technology, but also training them in so-called transversal skills like communication, social behaviour, decision-making, creativity. Also because these are the points that the technology will not very soon be able to replace. So if we have a change in the education system but also in the awareness of the workers and employers that these type of skills will be needed further in the future, that will be an important point for ensuring employability.

As regards the guidelines for the employers, I think an important role that is not very much discussed yet is the role both of the line manager and of the HR manager. We need to ensure that they are skilled enough, that they are aware of what is needed at the workplace, that they can create a good working environment. So it's not only about the individual affected worker and the employer as such, it's also about the role in between: that we need to ensure that the capabilities of bringing together the technology with the worker in terms of skilling but also in terms of work organisation and including also the social aspects related to that are considered.

1-040-0000
**Chair.** – Thank you very much for the cooperation, dear colleagues and dear experts in this first panel. Now with this I'm passing the floor to my colleague, to the Chair of AIDA – the guardian of time, you have to be very strict – for the second panel: artificial intelligence and the future of skills.

# 3. Panel II: "Artificial intelligence and the future of skills"

1-041-0000

**IN THE CHAIR:**
**DRAGOŞ TUDORACHE**

**Chair.** – Thank you very much, Lucia, thank you very much again for helping us co-organise this event and also for chairing the first panel. From the little that I've heard, you have had already a very interesting discussion.

We will now start the second panel. And before moving on to the speakers I would kindly ask the AIDA members not to forget that at the end of the panel they should not leave either the physical room or the virtual room because we have a continuation, a point of order, where we need to elect our Vice-Chair, so please stay for another 15 minutes or so at the end of the panel to go through that point of the agenda.

With that, I will start the second panel. We have four panellists. Each of them will be given five minutes as always for their introductory remarks. I would kindly ask them to stick to the five minutes because we are running a little bit behind schedule. I will quickly introduce the four speakers, each of them bringing their unique perspective on the issue of the future of skills, a very important topic for our conversation.

We have Ms Ivana Bartoletti, author of *An Artificial Revolution*, editor of *The AI Book* and founder of the Women Leading in AI network. Then we have Mr Christos Tarantilis, Professor of the Athens University of Economics and Business, and Member of the Hellenic Parliament.

Mr Jens-Henrik Jeppesen, Director, Public Policy - Europe, Middle East & Africa, at Workday, and Ms Catelijne Muller, welcome back again, President of ALLAI, AI rapporteur for the EESC and a former member of the High Level Expert Group on AI and a member of the OECD Network of Experts on AI (ONE.AI).

So a very warm welcome to all four panellists. After that we'll start the Q&A with the usual ping-pong: two minutes per question, two minutes per reply. And as always, don't forget to indicate to whom you address your question.

So Ms Ivana Bartoletti, you have the floor for five minutes.

1-042-0000

**Ivana Bartoletti,** *Author of An Artificial Revolution, Editor of the AI Book and Founder, Women Leading in AI network***.** – Thank you so much for having me here. This five minutes I just wanted to start by highlighting from what I am seeing happening across Europe and beyond in relation to the effect of the pandemic on the take-up of artificial intelligence and robotics, by saying that many organisations are increasingly turning to robotics and digital technologies during this pandemic. We've seen all this happening to account for social distancing and help meet increased demand for certain goods and services and minimise the need for people to work in environments that may put them a risk. We've seen a lot of this changing, so for example we've seen how the pandemic has brought us closer to what is called the 'robot take our future'; we've seen robots in automated systems deployed for tasks including cleaning hospitals, warehouses and public spaces and delivering food shopping for people at home. I was just reading the other day that a survey found that 60% of companies have recently responded that the pandemic has really accelerated the deployment of automation and AI. So this is the first point that I wanted to make: it is really to understand the context. There is a sort of skyrocketed take-up of innovation for artificial intelligence, automation and robotics.

So what are the effects of labour on this? I think it's really important to understand a few things. There are two different views of thought, as you know, with some people saying AI is going to take over our jobs and some saying: no, AI is going to create jobs. And I think the first thing the legislators and policymakers need to really understand is that it's *(inaudible)*. AI is actually a source of more work, and the reality is that technology has a really double-edged capacity to provide solutions that also create problems. AI needs a lot of skills, it needs trainers, it needs translators.

But then with this, we have seen a second effect coming up: that a lot of the jobs that AI is actually creating are not good jobs, and the workers that are doing a lot of these jobs are often called ghost workers, and a lot of the jobs that AI is creating are not great. Some of these jobs are actually dangerous and as roboticist Alan Winfield brilliantly put it, the problem with real robots in warehouses, for instance, is that AI systems are not yet good enough to do everything in, for example, say a warehouse or in Amazon or whatever, so humans have to do the parts of the workflow that robots cannot yet do. And as we know from press reports, these humans are required to work super fast and behave, in fact, as if they are robots themselves.

So, the second point that I really wanted to make is not all the jobs that AI is creating are great jobs. Actually there is a lot of low-paid and low-quality and also dangerous and stressful jobs that are coming out from artificial intelligence. Yes, AI is augmented work and this is really good, but we have to ask each other which work and which labour sectors is actually AI augmenting. We're seeing a lot of AI augmenting the jobs of lawyers, the jobs of doctors with, for example, precision medicine and the works of engineers. But is really AI augmenting and improving the work, for example, of carers or cleaners? So there is an unequal distribution there.

The other effect on work, before I close, is human knowledge, and I see a real danger here: how are humans continuing to learn if machines will increasingly take decisions for them? The other research concerns responsibility: how will workers understand how a particular machine, say a doctor, for example, relying on a precision medicine AI system to dispense a particular drug to a patient, not only how is that learning, how is that knowledge of the doctor kept up to date, but how will she then be responsible for the decisions that the machine has been made.

So, a few solutions, ideas that I think are absolutely necessary. The first is that we have to rethink assumptions, and I would like policymakers and EU legislators to question the assumptions that we've got around artificial intelligence. It's not true that organisations can seamlessly and quickly deploy AI. It's not true that humans are machines that can be replicated, and the techno chauvinism approach is really bad as well. That says that it is politically, socially and economically the right thing to do to apply these technologies in any case. AI has tremendous potential but has also great *(inaudible)* and that is because AI is a general technology that can be applied to all sectors.

So some solutions have already been discussed: retraining, training, teaching data and related skills, but there is no way that this is enough. So I would suggest a regulatory framework, like the one that the EU is discussing right now. Companies need the certainty of the law and consumers need protection and safety. Regulation is a driver for creativity – think about the GDPR. At the beginning there was a lot of concern: 'oh, it's going to hinder progress'. In reality, the GDPR unleashed a lot of creativity at global level. Impact assessment will have to become the new norm. A thriving society is one that embraces the idea of responsibility, and I think we have to create a thriving ecosystem of assurance which involves business innovating with and not against workers. So, impact assessment and a real thriving system of assurance of AI systems across the EU, I think, needs to complement the regulatory framework that the European Commission has just proposed to ensure that there is an assurance system around what is the impact of a particular product on workers, on employees, on their training, and how will these issues be dealt with as part of the transformation journey. Working with machines, I think a lot needs to be taught and trained in relation to what does it mean to work alongside machines, for example, all this around humans in the loops: how are we going to teach that?

And the final point: we've got to bring the most diverse workforce in this area. We only have a small percentage – we're talking about 20% – of women working in this area, and this is nowhere good enough. If AI is going to transform for the social good, then we need a diverse workforce and we need a lot of women to lead in this space, to be involved in *(inaudible)*, and policymakers across the EU really have to find new innovative ways to create and bring a wider workforce into this space.

1-043-0000

**Christos Tarantilis,** *Professor at Athens University of Economics and Business***.** — Good evening and thank you very much for having invited me to speak. I have been working on AI design since the late 1990s and therefore have an in-depth knowledge of the international labour market in AI. Hence my intervention will be on the basic skills needed for the professional specialisations directly or indirectly related to AI.

I will start with a very basic specialisation: that of data scientists, who design and implement AI algorithms. Specifically, they need basic high-level skills in mathematics, statistics and machine learning. They also need to continuously upgrade their knowledge and skills in programming languages. As data scientists manage algorithms in AI systems, it is also very important in my opinion to train them in fairness and ethics, so that the algorithms they produce are free from bias and assumptions. In this way, the type of inequalities and discrimination that the results of AI algorithms can give can be avoided.

A second specialisation, which is also very important, is that of data engineers, who deal with data management and specifically the collection of data from different sources and their combination. This data is then transferred to the data scientists, whom I have referred to above, in order to train the AI algorithms. The skills needed by data engineers relate primarily to database programming languages, such as SQL, as well as data integration skills.

Of particular importance are data protection officers, especially since the entry into force of the GDPR, the Europe-wide regulation on personal data. This specialisation also requires skills in security and data storage.

Next I will talk about a large category of professionals who are not users of AI systems but who benefit greatly from them. AI systems perform so-called 'time-consuming standard procedures', whereby the operator does not need a degree in computer science. These operators may work in sales, or they may be doctors, lawyers, economists, or may even have no university degree, and have only just realised that they may need to manage a large amount of digital data at work or develop a forecast model or even visualise the results of AI algorithms or their data. They therefore need a basic knowledge – not an in-depth knowledge, as in the past – of mathematics, machine learning, statistics and programming languages like the R programming language. I would like to stress that this category of professionals can actually be trained within a maximum of six months. I can say this with confidence, as I have organised such training several times in the past.

Now I would like to refer to the category of workers who, once AI frees them from the bureaucratic processes they have to do at work, can focus more specifically on more creative issues which allow them to develop as professionals. A typical example is that of civil servants, who, once relieved of bureaucratic procedures, can be transformed from mere processors into valuable advisors and coaches for the citizens they deal with. It is understandable that soft skills, including creative thinking, creativity, critical thinking and communication, are of the utmost importance for this category of workers.

To conclude, I would like to point out that the combination of a basic knowledge of mathematics, statistics, machine learning and programming, together with training in ethics, fairness and critical thinking, will very soon be just as important as reading and writing. We can look at how to turn this into policy during questions.

1-044-0000

**Jens-Henrik Jeppesen,** *Director, Public Policy - Europe, Middle East & Africa***.** – Thank you very much for the invitation to join you today. For those of you who don't know us, Workday is a leading provider of enterprise cloud applications for human capital management, finance planning and analytics. We have more than 8 000 customers globally, and many of them in Europe, and we serve our European customers from 21 offices across the continent. With our expertise in applications for human capital management, we sit at the intersection of digital technology and the workforce, and are very pleased to contribute today.

So, workplace transformation is accelerating rapidly. This trend is driven both by the current pandemic, and by long-running technology trends. Workers' roles and job content are changing rapidly, and the requirements of the labour market are evolving constantly. And this results in a skills gap across the economy. Job opportunities become available, there are people looking for jobs, but they don't necessarily have the right skills.

At Workday, we see skills as the currency of the changing world of work. And we see companies move towards skills-based employment practices, and this means basing hiring decisions on skills rather than pedigree, and creating a more inclusive labour market.

Machine learning powered tools can play a role in improving outcomes for workers and employers alike. They can enhance skills development and they can create internal mobility. They can enable better hiring decisions and enrich workers' careers with tailored upskilling, improve mobility and connecting people with the right opportunities.

A concrete example of this type of technology is the Workday Skills Cloud. This is a machine learning enabled framework, built into the core of our human resources software. It's a universal skills ontology that provides a way of understanding what makes up a skill and understanding the relationship between different sets of skills, and it uses machine learning to read and systematise data in a variety of structured and unstructured formats.

Applications based on this technology can enable employers to understand the skills they have in the organisation and identify skills gaps. And they enable employees to find short-term internal opportunities for career growth that match their desired skill sets, and curate content for employee learning and training programmes adapted to their skills and career interests.

And in this way, AI and machine learning can enable skills-based employment practices and help create a more equitable labour market that screens in for skills rather than screening out those that lack traditional degrees and credentials.

Workday is keen to engage in policy conversations about the future of work both in Europe and elsewhere. And we are pleased to see the EU institutions and Member State governments take a comprehensive and proactive approach to skills and workforce policy. And I would just highlight three policies and programmes.

First, there are several EU programmes that dedicate financial resources to promoting digital skills, re-skilling and qualification. The Recovery and Resilience Facility, the REACT-EU programme, and the European Social Fund are examples.

Second, the 2030 Digital Decade Communication, adopted in March 2021 by the European Commission, sets ambitious targets for Europe's digital transformation. And digital skills development is one of the four key areas for action in this Communication.

Third, the EU Pact for Skills was launched by Commissioner Schmit and Commissioner Breton in November of last year. It's one of the flagship initiatives under the European Skills Agenda. The Pact brings together a broad range of private sector companies and public sector organisations to cooperate on upskilling and re-skilling initiatives. And Workday was pleased to join the Pact when it was launched, and we look forward to engaging with partners in that context.

In conclusion, European societies have an important challenge in ensuring that labour markets create new opportunities and help people get the skills they need to connect with these opportunities. Tools powered by AI and machine learning can help both employers and employees navigate the changes in the world of work we are currently seeing.

And finally, I would just commend Parliament for prioritising skills and workforce issues in its work on AI policy, and we look forward to contributing to this work going forward.

1-045-0000

**Catelijne Muller,** *President of ALLAI; AI rapporteur for the EESC***.** – Thank you very much, Chair, for having me. I want to start by saying something on the Commission proposal. I'm not sure if Ms Colclough or Mr De Stefano already mentioned this, but I think if I'm repeating them it's because it is an important topic.

I want to say something especially about the fact that the use of AI in labour settings is on the high-risk list of Annex 3. At first sight this looks good, right? AI for recruiting, for worker monitoring, for evaluation of their performances – all high risk.

But what does this exactly mean? And I think this is important for you parliamentarians to know this going forward with the regulation and the negotiations on it.

High-risk AI is not prohibited in the regulation. You have to comply with a number of requirements, but if you do, you are allowed to track your workers with AI, to score their productivity with AI, to look at their screen time, their keystrokes, to listen to ambient sound, to their voice, to their copy-paste behaviour, their speed of working, their gestures – anything that you can think of, you can look at that and you can score them.

So this qualification, this classification, of these types of AI on the high-risk list does bring the risk of normalising these types of AI on a massive scale, while we might not want this in the workplace because it might affect our right to a safe and healthy workplace. And as Ivana already mentioned, there's currently a surge in uptake of these kinds of AI applications during this pandemic, because we're all working from home and employers want to check on us. In fact at my organisation, we have dedicated an entire project on it called AI in Corona. So if you want to have a look, you can visit our website.

About skills: AI is not just about the technology. It is even more so, maybe, about the question if, when and how we use it in the real world. We know that AI has vast ethical, legal, societal and even environmental implications. So when we talk about AI and about the skills that are needed in a world for AI, we talk about a wide variety of fields, a wide variety of expertise and a wide variety of skills.

For example for citizens, a basic understanding of what AI is, is necessary: what it can do but also what it cannot do; what we can expect of it and what for now is still wishful thinking. For example, how we can opt out of it. But what about professionals? What kind of professionals need what kind of skills? The AI developer, the legal officer, the privacy officer, the politician, the doctor, the judge, the banker, the police officer – all these people will be working with AI at some point in time. And for sure, they do not all need the same set of skills. But some form of cross-pollination between different skillsets is necessary in this.

The data scientist must be made aware of the legal and ethical implications of what he or she builds. I still hear many data scientists tell me the data shows me that there are more fraudsters from North African descent and they find it hard to understand why this given cannot be used to flag people from North African descent as potential fraudsters. So I explain to them that we cannot extrapolate data about one group and project that on an entire population from North Africa, because that is simply against the law. That is where we need this cross-pollination.

Everybody seems to agree that we need to strive for AI augmenting work competences, human AI collaboration, AI helping us to become better at our jobs. But we need to know that in reality this is not that simple. Humans tend to trust automated systems. So as a solution, we call for human oversight or a human in the loop: someone that reviews the decision of an AI system.

But does that solve the problem? Not always. It sometimes even enhances the problem. There are signals that humans, when offered an AI decision on, for example, potential fraud, tend to dive into the dossier to find the fraud, even if it's not there. So working with AI requires a lot more than just a human in the loop or everybody knowing something about the skills. It requires knowledge about what AI can and cannot do and that it mostly predicts things and that it doesn't

know anything for certain; that it can be flawed in ways that humans will never be. And all this knowledge should be available throughout.

So I advocate for a cross-pollination of all these fields. And it is not an easy task, but it is something that we need to think about. My five minutes are up, thank you very much.

1-046-0000

**Anna-Michelle Asimakopoulou (PPE).** – Thank you, Chair, and my question is for Professor Tarantilis. As you can see, Professor, the impact of technological change on industries, jobs, and skills has been at the forefront of our policy debate in the AIDA Committee, and I appreciate that in your presentation you were extremely practical – obviously, as a support to data which shows that 70% of European businesses report a lack of staff with adequate digital skills as an obstacle to investment and productivity growth. Companies obviously need skills to provide new AI applications and services, including, as you mentioned, data scientists, data engineers, scientists with ethics training, data protection officers, etc. Clearly, without the right training to close the skills gap, fewer businesses in Europe are going to be able to integrate AI into their operations.

Now, AI will be used for new business models, for products, for skills, which suggests a large transformation of most jobs. So this in itself raises questions about how this technology will affect demand for skills other than IT- and tech-related. And it was interesting that you mentioned something that I read in a recent Gartner report, that the strongest demand for talent with AI skills over the past few years has come not from the IT departments but from other business units, like marketing, sales, customer service and R&D.

So as part of the 2013 Digital Compass, the Commission, as you know, has set a number of very ambitious targets, like 90% of SMEs with basic levels of skills *(inaudible)* ICT specialists. One of the lessons we learned from the pandemic is that in times of rapid change, when things get more complicated, when we're uncertain, responsible governance required that we are prepared for the unexpected in order to build greater anticipatory capacity.

So my question to you, Professor Tarantilis, based on your high academic credentials, on your long-standing experience with artificial intelligence and on your practical proclivity, as you demonstrated in your presentation today, is: do you think that Europe is doing enough in terms of strategic foresight when it comes to artificial intelligence? What would you suggest we focus on in order to support a more effective forward-looking and long-term approach in our digital policy-making?

1-047-0000

**Christos Tarantilis,** *Professor at Athens University of Economics and Business***.** — I think that Europe has already talked about what we call a strategic transition to the digital economy, and also about linking the labour market with very specific skills. This can be done in a number of different ways. The first is by means of fast-track seminars on specialisations and skills needed by the labour market in order to fill the new positions that will be created quickly.

There are many, many studies by well-known think tanks, such as Bruegel and other organisations, that report thousands of unfilled IT jobs. These can be covered by seminars aimed at carrying out what we call reskilling and upskilling of skills needed by the market. In short, the State, businesses and professional associations need to work together to define the right skills and properly target fast-track seminars in these skills.

Another way that the European Union has spoken about and should set its sights on is a comprehensive reform of teachers at all levels of education. As I said in my speech, it is crucial to introduce already in primary and secondary schools, colleges and universities a basic knowledge of mathematics, statistics, programming and critical thinking, ethics and fairness,

regardless of the field of study. These basic skills should be viewed with the same importance as reading and writing, which is also why they should be introduced at the basic levels of education.

1-048-0000

**Dragoș Pîslaru (Renew).** – There is no question about the benefits that artificial intelligence brings to labour markets and the development of skills, as well as the challenges that it brings with it. AI has this great potential to foster a sustainable and inclusive labour market and to improve the matching of skills and vacant jobs. It can actually lead to better workforce access for previously excluded social groups, such as for instance persons with disabilities, while also improving the participation of women.

But a better and timely evaluation of data, with the aim of anticipating the new types of jobs and necessary skills and the short- and long-term impact of AI on the labour market is actually essential. We have to ensure the investment in infrastructure, training in digital skills and major improvements in connectivity to fully benefit from AI, avoid the digital divide and, you know, tap the potential to equip our workers with adequate skills for a changing labour market.

This vast digitalisation pushes us to act fast and already implement and test different schemes of AI systems and facilitate and provide quality training tools. In this context, my questions that go to Ms Ivana Bartoletti and Ms Catelijne Muller are:

How can we ensure that AI contributes to skills intelligence and skills match while also helping equip people with the skills needed for future work in the changing labour market and how can we ensure that AI will foster skills development, especially for those that have less access, like people with vulnerable backgrounds or women?

1-049-0000

**Ivana Bartoletti,** *Author of An Artificial Revolution, Editor of the AI Book and Founder, Women Leading in AI network***.** – Thank you for the question. Nothing is inevitable about AI: it's a technology that has enormous opportunity, but as Catelijne said, it's far more than a technology – and I would also argue that it is very much about power as well.

Skills match, so I think it's really important to get people from all sorts of backgrounds to contribute to this, and this is the greatest challenge that I think we've got at the moment. And it's not just in coding, it is really making decisions around artificial intelligence and really making sure that we can reach to all backgrounds – and that starts from early years – and really making sure that people are involved and learn new skills from very early on. But at the same time it's really important that we ensure that, when a decision about deploying or developing a particular kind of technology is re-evaluated with the people that are going to be impacted the most, and this is very much likely to be the most vulnerable in our society. This is why I mentioned that impact assessments are going to be absolutely crucial, and I think Europe needs to really try and see what does this ecosystem look like, where we can assure products in order to make sure that they are fully evaluated when it comes to their impact, especially on those that are going to be impacted the most by these technologies.

And the last thing I'm going to say is really that programmes to get more women into these technologies are absolutely crucial. This has to be through mentoring to intervention coming from government and local authorities, but it's really important to ensure that they have more women into the system.

1-050-0000

**Catelijne Muller,** *President of ALLAI; AI rapporteur for the EESC***.** – Yes, thank you for this question. I agree with Ivana on everything she said. I think that what is really important is that workers should be involved in the implementation process of any AI that they are going to use in the workplace. All types of workers, not just the doctor that is going to use the system to

diagnose something or to help him diagnose something, but also the front-office worker that sits on the phone with somebody who is denied social security benefits because of an AI system that flagged something. These people will also have to know what they're working with and if they want to work with it. So they should be involved.

And as for example people with certain disabilities, AI can really help them enter the labour market more easily and we should allocate money towards that. People with hearing disabilities, people with visual disabilities, they can really be helped by AI technology, but we should also help employers, and these people themselves of course, in implementing these kinds of systems that really push these people up into the labour market. That is my answer.

1-051-0000

**Alessandra Basso (ID).** – Thank you, and thank you for your contributions. I have two questions for Ms Muller. First, you spoke about the dangers of surveillance and I would like to ask a question relating to the White Paper on Artificial Intelligence. The GDPR defines biometric data as data resulting from the physical characteristics of individuals for the purpose of identifying them. They are protected data – eye distance data, cheekbone and forehead structure, and so on, which form the basis for the biometric identification of persons.

Earlier on you also spoke about aspirations. Now, artificial intelligence is also being broadened to cover the identification of emotions and human attitudes, claiming, not always correctly, to be able to identify them by analysing these characteristics, as well as through artificial intelligence, precisely. May I ask you whether you do not think that biometric data for reading emotions, too, should be limited and subject to the GDPR?

1-052-0000

**Catelijne Muller,** *President of ALLAI; AI rapporteur for the EESC***.** *– (inaudible)* Commission. To answer your question, I think it should be very high up the risk pyramid. If you look at the regulation, biometric identification – so to identify a person – is now in the second-lowest risk category. Someone only has to tell somebody your emotions or even behaviour is being looked at, and then it is connected to identification of people.

I make the point that identification is something different than recognition. And what you are talking about – emotion recognition, behavioural recognition, based on tone of voice or what have you – is something different than identification, and it's something that we should be very, very cautious with. There is no scientific evidence that can tell whether I will be a successful employee by the tone of my voice or the number of times I look away from my screen or by the colour of my eyes, I mean it goes towards phrenology.

So I fully agree that this should be much higher up the risk level, and maybe it should even be at the prohibited AI applications of the proposal.

So I think that the connection with the GDPR here is basically the same, because also the GDPR deals with identification of a person. So are we able to look at a person's features and then say this is Catelijne Miller? But that is not the point. The point is that many of these technologies, as I said, are not to use to identify me as a person but to identify or to categorise me in a certain category based on my perceived emotions, or looks, or posture, or whether I move my hands around a lot, and there is no scientific evidence for that. So this is an important question and something that I'm happy that you flagged.

1-053-0000

**Alexandra Geese (Verts/ALE).** – A couple of quick questions to Ms Bartoletti and then a very quick one to Mr Jeppesen. Commissioner Schmit before said that collective bargaining should be the solution for admitting AI in workplaces but we know, as you mentioned, that often jobs currently connected to AI are low income and low skilled, so workers don't have bargaining power. So do you really think collective bargaining can be the solution when we know that the

handful of leading western AI companies are famous for crushing trade unions and not allowing workers' representations and workers' councils in their companies?

Second question, in order to avoid bias enhanced by AI in recruiting and staff management, is it enough to say that the data needs to be representative, as the Commission proposal does, or do we need anything else? Do you think that the Commission AI proposal is sufficient to avoid bias?

And the very quick question to Mr Jeppesen: some time ago I met another representative of your company, before your time there, and he said, well, we imagine managing tens of millions of employees for our European customers and we have one single expert on gender discrimination who's sitting in the Bay Area in California. Has your company hired more gender experts in order to avoid bias, or do you still think that one person is enough to combat bias for tens or hundreds of millions of employees? Thank you very much.

1-054-0000

**Ivana Bartoletti,** *Author of An Artificial Revolution, Editor of the AI Book and Founder, Women Leading in AI network***.** – Thank you so much. So, the first question: I think collective bargaining is absolutely important, but I do agree with you that what we have seen a lot happening is the abrasion of workers' rights through the platformisation of work – but at the same time, we're seeing a collective response against it, and I would mention the recent cases that we've seen, for example, in Bologna, but also in the Dutch courts, really showing that there is an increased interest in this from the courts. So I think it's really important to look at what is happening on that front. And I would also add that impact assessment, I think, is really important, because impact assessment allows to understand the wider implication of a particular system on workers and employees and really using what was actually introduced by the General Data Protection Regulation with the Data Protection impact assessment, which is negotiation, which is deliberation, which is the fact that in order for products to be deployed, then you have to assess the impact and understand the trade-offs alongside the people working in the organisation.

On data, I think there is an issue here. The issue is that bias in AI does not only emerge through data but also emerges at different stages of the process, for example because of the features chosen, because of the criteria chosen. If I want to identify with AI what I think is a good employee, the sheer definition of what is good is not neutral, but it's the outcome and the output of historic inequalities and also the dominant cultures. So the data is not the only reason why a particular product may be biased. The bias can emerge at different stages of the process. Also because, for example, a product is trained with some particular data and then is deployed somewhere else, and that is also one issue that can lead to bias.

This is what we really need to understand where bias can come from and why it's not straightforward as in relation to the data. The actual deployment of a system could also be biased. And the example for this is facial recognition: you can have the perfect AI that totally recognises black faces and is not biased technically, but then you would end up perhaps deploying it in a way which wraps surveillance around the most vulnerable anyway. So it's not just the data but it's also the deployment and the parameters and the criteria chosen for the system.

1-055-0000

**Jens-Henrik Jeppesen,** *Director, Public Policy - Europe, Middle East & Africa***.** – Thank you and thank you for the question. Yes, so to the issue of discrimination and bias in recruiting or employment decisions. This is probably the overriding concern for all of these applications and this is an area where we have made tremendous progress in the past number of months. So we have in fact created an entire new product offering that we call VIBE. It stands for value, inclusion, belonging and equity.

So what this solution does is it offers, it enables our customer companies to be able to set targets and track progress in terms of ensuring that not only their employment hiring practices but also their promotion practices, their offering of mentoring programmes, offering of trainings, that they are able to track progress in terms of ensuring that they allocate enough resources to employee populations that have been historically disadvantaged, for example, and that very much includes gender issues.

So this is really at the core of the kind of progress that we try to drive with our products and with our solutions, and this is something that we're working on very closely with all of our customers and I will be very happy to follow up with you, Ms Geese, and provide additional information on this offering and how we work with our customers in this area.

1-056-0000

**Margarita de la Pisa Carrión (ECR).** – My questions and thoughts go to Ms Bartoletti.

The challenge of implementing AI in the labour market, knowing what its impact is, getting the best out of it without being overwhelmed by its constant improvement, is important. We have to ask ourselves: to what extent are people's real needs are being taken into account? Is it possible that we are establishing new practices that undermine people's dignity?

Ethics must be considered in every application of AI. How can we ensure that this is done? We need experts to help us implement responsible policies that temper the fantasy of limitless technological progress and prevent us from backsliding in our humanity.

How can we take individuals' every aspect into account? How can we safeguard freedom, dignity and human rights in an environment that is so difficult to control? It is a risk that these technologies will monitor our lives, even our social and personal lives. It is a risk that we may be categorised and treated unfairly and in a biased manner.

That training is needed is a fact, but training plans should not be geared solely towards technical skills. It is more important than ever, if that is possible, that we develop human skills such as creativity, sociability, thinking skills, training on anthropological and humanistic aspects, to create a future based on respect and the search for the common good. Do you think that proper account is being taken of these skills?

1-057-0000

**Ivana Bartoletti,** *Author of An Artificial Revolution, Editor of the AI Book and Founder, Women Leading in AI network***.** – Thank you for this. A few points that I really want to make in response to these questions. The first one is around the current legislation. There is legislation in place: if we think about, for example, the General Data Protection Regulation, which is based on the concept of human dignity really, and it's really important that we leverage that as much as possible.

So when it comes to human dignity, when it comes to the privacy of the autonomy, so for example, privacy as the fact that you don't want to live your entire life been bombarded with algorithms having an editorial function, so basically acting as a gateway to what you've seen and to the reality that you're exposed to.

So it's really important that we understand that there is legislation in place already – the General Data Protection Regulation, legislation around human rights, anti-discrimination – and it's really important to understand how this legislation applies to AI systems.

Anti-discrimination: for example there are accurate studies, especially from Oxford University, basically saying there is a problem with anti-discrimination legislation because anti-

discrimination in artificial intelligence systems may happen by proxy – so not necessarily based on the protected characteristics, but it may happen when some specific elements are used as proxy to the specific characteristics.

So it's really important that we've got legislation out there, and we need to leverage that. And then on top of that there is the plan of the European Commission around the EU Act. But really looking at what is existing already is really important.

Then the second point that I wanted to make briefly is bound to wider ethical considerations. We need a lot of ethicists, but I don't just think about people coming from academia and ethics. We really need to make sure that we have people from different walks of life joining in this.

An impact assessment of AI technologies is important because it means asking: what is the impact on the community? If I'm doing something that is going to change the way that a company is working, is selling, then what is the impact on the community that is going to be affected? This is very much an ethical approach, and I think this needs to be the reality moving forward for companies in the EU.

1-058-0000

**Konstantinos Arvanitis (The Left).** — Dear Chair, dear Ms Müller, I think you will agree with me that the devil doesn't wear Prada – although it was an interesting and fun film – it's in the details. I remind you and I'm sure you will agree with me that, according to the EMPL Committee's opinion on redundancies and recruitment, the algorithm does not make decisions. The algorithm is at the service of the people and this detail creates added value – positive, I believe – for our work.

I would now like to address a question to Ms Bartoletti. You mentioned ghost workers. This is a phenomenon that creates a great deal of problems with regard to low wages and, in particular, tax evasion. In Europe we have not yet developed a tax system that will tax or penalise companies that take on these types of workers and, of course, this also creates problems in terms of labour relations. You replied that Ms Müller was very specific about the White Paper.

We will close with Mr Tarantilis who, in addition to being an excellent professor, is a politician. He is a former government spokesperson and rightly said in his interesting statement that these issues will be solved by policies. What exactly do you think about that? Could a reduction in working hours, for example, be of benefit to workers so that they receive part of this added value? I would like you to tell me, Mr Tarantilis, whether you are afraid of the following: is it possible for us to create a new class of lumpenproletariat who do not have access to artificial intelligence, who are truly at the mercy of policies and who are excluded? The possibility of exclusion is something that really frightens me.

1-059-0000

**Ivana Bartoletti,** *Author of An Artificial Revolution, Editor of the AI Book and Founder, Women Leading in AI network***.** – The point I was making is that we can't think automatically that all the AI jobs will be glamorous, AI jobs *(inaudible)* model. There is a lot of jobs created by AI that revolve around, for example, training machines, ingesting data, feeding algorithms data. For example, if you think about algorithmic machines that want to prevent, identify abusive language online and harm, you have to feed these algorithms with loads of images around this, and this is something that is leading to workers suffering from post-traumatic stress disorder, from depression.

I think it's really important to understand the reality which is, as mentioned correctly, that artificial intelligence is creating glamorous or really important jobs, but at the same time, some really dangerous and low-paid and low-quality jobs. Therefore, we need to think about, from a

social perspective, what that means and creating enough welfare protection to wrap around those who are not benefiting from the high-end AI.

1-060-0000

**Christos Tarantilis,** *Professor at Athens University of Economics and Business***.** – Thank you very much, Mr Arvanitis, for your question. Surely policies must provide solutions. Let's see why we need to provide solutions. Let's highlight some of the issues that have already been mentioned in our discussion today relating to the ethics issues raised. In the context of the invitation addressed by the European Commission to the European Parliament on 21 April 2021, policies can certainly impose specific ethical rules and rules of conduct on the functioning of artificial intelligence systems so that they are governed by ethical rules and rules of conduct. But specific frameworks need to be put in place.

Policies should certainly provide solutions to allow major changes to the education system and for the right skills to be introduced – not only technical skills, but also so-called soft skills, such as critical thinking, as well as training in ethics and fairness. The aim is to enable people, whether working with AI or not, to understand where there is inequality and injustice.

It is very important that people in general, not necessarily only workers but also citizens, are trained in the right way so that they understand how the information with which they are provided is derived. It is also very important to be able to understand if this information is attempting to influence them.

In short, policies can certainly provide solutions that are a step in the right direction and under no circumstances should segments of society be excluded. As I said in my speech, on many occasions in the past I myself trained workers who did not hold a university degree. Together with my university colleagues, we managed to train them and after only a few months they were able to acquire skills they hadn't even imagined, as well as find a job. That's my vision: to be able to train people quickly so that they can find a job, and to train them without giving them money, but to offer subsidised training so that they acquire the right skills to find a job, even a well-paid job, because this job will be based on skills and knowledge.

1-061-0000

**Sabrina Pignedoli (NI).** – I have two very quick questions. One to Mr Jeppesen. High-level training and its promotion, including technical training, for specialised workers and employees, has been discussed. I believe this is nonetheless important. I wanted to ask: what is the market like for this kind of worker in artificial intelligence?

Then a question for Ms Muller. There might be some inequality when it comes to training in areas such as rural, mountainous or less privileged areas. I believe that artificial intelligence should be a way to try to develop these areas. Europe is therefore attempting to balance the retraining and digital training of workers with the depopulation of rural inland areas. How can EU initiatives on digital training for inland areas be optimised?

1-062-0000

**Jens-Henrik Jeppesen,** *Director, Public Policy - Europe, Middle East & Africa***.** – Thank you very much for the question. I will be brief. So indeed training more ICT specialists is a cornerstone of many EU policies and, as I mentioned before, there are a range of programmes that are dedicated to this objective, and rightly so, because many companies report difficulties in filling positions in Europe in these fields, and that is not optimal in terms of ensuring that we offer the kind of rich and good prospects for people to find prosperous employment in Europe.

So I think the best, the latest numbers that the Commission laid out were in the Digital Decade Communication where the 2019 number was around 7.9 million ICT specialists and the objective is, according to the Commission, to increase this to more than 20 million ICT specialists in a variety of fields. And I think that is exactly the right way to go about it.

1-063-0000
**Catelijne Muller,** *President of ALLAI; AI rapporteur for the EESC***.** – Yes, thank you for the question. I'm not sure whether there are specific initiatives to try to reconcile the training in our rural areas. I think it's very important that we reach the rural areas as well but the programmes that are currently under development, they are still under development, so I would suggest that that we make proposals to that end.

As for using AI to reach those areas, that is not that easy. What I've noticed is that as regards 'AI for good', so AI that helps us reach the sustainable development goals, I have not seen that many AI applications in that field yet and that is because there is a lack of machine-readable data, and that is really an issue here. We have a lot of data and everybody thinks, well, we have a lot of data, we can throw that at AI and it will solve everything. But technically, that is not the case.

So what we really need is machine-readable data. And if we make efforts and allocate funding towards that also, and then specifically machine-readable data for reaching the sustainable development goals or for reaching out to rural areas – we have a lot of data, but making that machine readable that could help leverage also these areas and leverage these goals.

1-064-0000
**Ivan Štefanec (PPE).** – Mr Chair, thanks to all presenters for very interesting information. I'm absolutely sure that we are facing challenging time, and if we want to maintain our economic growth and prosperity, education must be inseparable part of each employee. I have therefore two questions.

Firstly, how do we want to motivate entrepreneurs to offer education services to employees?

And secondly, in terms of schools, how do we want to motivate teachers to become much more flexible to modify their systems, as they are very often unprepared, with no support or conditions from schools or national governments?

So from my point of view, those are quite key questions – motivation of entrepreneurs and motivation of teachers – for future. And if I may ask Madam Bartoletti to answer.

1-065-0000
**Milan Brglez (S&D).** – ... society and political decision-makers as an industrial revolution. In the nineteenth century, machinery and mechanisation replaced and improved the physical capabilities of human beings, yet humans, with their cognitive abilities, maintained control over the functionality of machines.

So it was also not overly difficult to retrain the workforce. However, algorithm-based AI and machine learning increasingly exceed the cognitive abilities of humans, entirely replacing their role in certain jobs, which are becoming redundant.

A further challenge is therefore to make a genuine leap in knowledge and skills. This makes, and will continue to make, retraining much more difficult. As knowledge and understanding of the functioning of AI goes beyond basic and digital skills, the field of digital literacy is significantly expanded.

This means that even in the context of a green transition it is difficult to expect, for example, the employees of a coal mine to be able to retrain for jobs requiring such advanced digital literacy.

It is also necessary to take into account restrictions on access to knowledge and skills, which depend on inter-generational differences, gender, social status and geographical factors.

Now the questions. First: as a society in the context of the digital revolution and the green transition, are we actually able to deliver this more advanced and high-quality digital literacy for both our older and younger citizens, regardless of gender, social status and geographical factors?

Second: can certain forms of public-private partnership, i.e. between the relevant ministries and high-tech companies, make a significant contribution to promoting access to such digital education and retraining opportunities?

And lastly: how can we ensure an appropriate balance between, on the one hand, state investment in strengthening digital skills and, on the other hand, investment in advanced technological equipment?

Thank you for your answers.

1-066-0000
**Chair.** – Any preferred panellist for your question, Mr Brglez?

1-067-0000
**Milan Brglez (S&D).** – I said Professor Tarantilis.

1-068-0000
**Sylvie Brunet (Renew).** – Mr Chair, I have a question more specifically for Ms Bartoletti concerning the place of women in the field of artificial intelligence.

We saw that the development of artificial intelligence was going to really revolutionise our societies and the job market, but it seems that just 22% of professionals in the field are women, according to the World Economic Forum's 2018 gender equality report.

So I would appreciate hearing her opinion on recommendations or examples of good practice which we could share, with the aim of increasing the number of women and young girls in the artificial intelligence sector, particularly with regard to basic skills, the link with what exists in Europe, Europass's DigComp – there's a lot of talk about it but some things already exist and we don't know how artificial intelligence will change all that.

Could you tell us more about this?

1-069-0000
**Ivana Bartoletti,** *Author of An Artificial Revolution, Editor of the AI Book and Founder, Women Leading in AI network***.** – Thank you so much. So the question around motivation is a really interesting one. I think that, when it comes to schools and students, the issue is not just about motivation. I think AI is already with us, and I don't think we need to think of a future where AI will arrive – I mean, AI is our mobile phones; AI is Google Maps; AI is everywhere.

I think what is important is to understand what AI is and what AI is not, and what AI can do and what it cannot do, and what we want it to do. So for example, do we want to invest a lot in predictive technologies? For example prediction, they carry the risk of building a relationship between the past and the present and the future in our societies. Is that something that we want, or do we want a future that – we don't want to base decisions around tomorrow on the data that we have today, because the data that we have today is necessarily not neutral but the product of history.

So I think for me, when it comes to motivation from teachers, motivation from teachers should be around citizenship and a digital citizenship in a world which is increasingly connected, and what can students and young people do to make sure that they retain a human-centric approach to what we do. And we can query what seems to be inevitable, but it's not.

So I think it's really important to say that we need education of what is AI and what isn't, what AI can do and what it cannot do, and what are the affordances within an AI system which can transform reality in a much bigger way. The other thing that we really need education on is to understand that it is not the machine that we need to deal with, it's the people behind it.

If we don't trust the technology, we trust the people who created it, the behaviour around it, the use of it. So it's really important to understand that it's not something bad, sort of divinity of a god, that it literally is a product which is made by humans which inevitably replicates the behaviour, the feelings and the bias of the humans that created it.

On women, briefly: there are a lot of good things happening: *(inaudible)* to involve women, role models, all these things are absolutely important; programmes to really take women at a young age and teach them – and not just young women; it's really important to do this across every age.

But I would also stress one thing, and I want to close on this. It's really important to have a very diverse workforce. It's really important to get more women into coding. But I wouldn't say that is the only thing, because where we need more women is in the places at the top of company boards, as well as in parliaments, where the decisions around AI are taken. Because AI is far more than technology, it's far more than coding: it's also something that changes the way that we live and we work. So where the decisions are taken, this is where I think we need more diversity and more women from every background.

1-070-0000

**Christos Tarantilis,** *Professor at Athens University of Economics and Business***.** — I would first like to state that I fully agree with Ms Bartoletti on the participation of women in decision-making centres. With regard to the question of incentives for companies to invest in upskilling and reskilling, i.e. in the training of workers, I would like to make a concrete proposal: to subsidise a percentage of each company's wage costs.

For example, in my home country, depending on the period, between 0.24% and 0.45% of wage costs are subsidised. This is something I strongly support, i.e. that a proportion of companies' wage costs can be subsidised by the State for workers' reskilling and upskilling.

Now, regarding incentives for trainers and teachers, if I understood the question correctly, I believe that there are many. If you are referring to school teachers, then the main motivation is that their work will become much more creative. This relates not only to school teachers, but also to university lecturers and professors.

As a professor, I spend a lot of time correcting students' work. If I were given the opportunity to spend less time doing this, I would be able to engage more with the views expressed by my students and this would be of benefit to them. The same applies to school teachers. They could devote more time to each child so that education becomes more personalised.

This would make the process much more creative, i.e. the teacher or lecturer/professor would become a very good coach for the pupil or student. In common, the motivation for university lecturers/professors and school teachers is that their work would, in my view, surely become much more creative.

1-071-0000

**Jens-Henrik Jeppesen,** *Director, Public Policy - Europe, Middle East & Africa***.** – Thank you, Mr Tudorache, for chairing the event today, and for allowing us to participate.

I just want to say that from Workday's perspective, we have been supportive of regulation on AI for quite some time. We have participated in the various stages of EU policymaking in this area, from the High-Level Expert Group and the Trustworthy AI assessment tool to the White Paper and the Inception Impact Assessment that followed the White Paper consultation. And we published our own paper in January of this year, which we launched both in Brussels and in Washington.

We are firmly of the opinion that regulation is necessary to ensure that the way industry develops and deploys AI applications for a variety of uses, that that goes on in a manner that is both ethical, fair and lawful. And we are now looking at the Commission's AI proposal. It's a very complex piece of legislation but it has a lot of very constructive parts to it, and we look forward to working with you on this important policy area going forward.

1-072-0000

**Catelijne Muller,** *President of ALLAI; AI rapporteur for the EESC***.** – Thank you again for having me. As a concluding thought, I just want to say that now an important phase starts, and that is the negotiations on the AI proposal by the European Commission. It is indeed a very complex proposal, so I would indeed stress that parliamentarians should have a very thorough look at what is actually said and what is actually meant by everything that is in there. It might be quite a gruesome task to understand that, and I would be happy to help with that and to really get to the nitty-gritty of the regulation. Because if you look at it from a distance, you think, well, there's some prohibitions, that's good; there are some high risks, that's good. But really you need to ask yourself: what does it mean if it's high-risk? What does that mean for society? What are we allowing, what are we not allowing, and is this the direction in which we really want to go?

So thank you again for having me, and please feel free to contact me at any time if you need some guidance in this process. Thank you.

1-073-0000

**Chair.** – Thanks to all four panellists for sharing your time, your thoughts with us today. It was very interesting and useful. Thanks to the Members for their participation. To the AIDA Members, again, do not run away, stay with us for another 10 minutes to go through the last point of the agenda, which is the election of the fourth Vice-Chair.

Until then, for the concluding remarks I would kindly ask the Chair of EMPL for her thoughts.

# 4. Closing remarks

1-074-0000

**Chair.** – Thank you very much for giving me the floor. I will be very brief. I think I will be speaking on behalf of all the Members from the two committees, EMPL and AIDA, if I say a big thank you to the expert guests for allowing us to have such an insightful and very interesting discussion. During the discussion we raised many questions, many of them of high public importance, and I think the conclusion is that this is really a situation where the European institutions, together with national governments, together with national authorities, have to work together to guarantee that artificial intelligence is being introduced in all fields of our life while respecting fundamental rights, ethical issues, data protection, as well as the highest standards of social protection.

There is no doubt that artificial intelligence will change our life and labour market, and for this I think we have to be ready and we have to be prepared. Some of the preparation we can achieve by European initiatives that we should launch, and this was a very great kick-off, I think, for these initiatives to come. But the truth is that the preparation has to be done on the very basic.

We have to put it in the curriculum and elementary schools really, because this has to be a part of our daily life. So thank you very much.

1-075-0000

**Chair.** – Thank you very much, Lucia. I fully share your thoughts and your conclusions. Clearly a very important conversation that will have to continue, also as part of the negotiations that we will start on the text of the AI regulation put forward by the Commission. This element of the future of education, the future of the skills and competencies that we need for our labour market remains and needs to remain central to those negotiations.

So with that, I thank the EMPL colleagues and I would kindly ask them, bidding them farewell, to leave the room or the Interactio virtual space, so that we continue in the AIDA format with the election of the Vice-Chair.

*(The hearing closed at 11.59)*