VISEGRAD 4 CONFERENCE ON ARTIFICIAL INTELLIGENCE

11 OCTOBER 2018

PERMANENT REPRESENTATION OF THE SLOVAK REPUBLIC TO THE EU
AVENUE DE CORTENBERGH 79, BRUSSELS, BELGIUM

VISEGRAD 4
CONFERENCE ON ARTIFICIAL INTELLIGENCE

11 October 2018

Brussels

Dear friends, colleagues and guests,

let me wholeheartedly welcome you at the Visegrad 4 Conference on Artificial Intelligence. This joint event is supposed to bring together distinguished professionals, researchers, experts and practitioners from various areas of economy and society, which have been directly confronted with the uptake and real application of artificial intelligence solutions.

On the top of that, I am proud that the conference takes place under the current Slovak Presidency in the Visegrad Group, which demonstrates an attractive model of economic a social transformation and a positive example for many other countries implementing reforms. I have to add that it has been a long and uneasy process where the Visegrad4 cooperation has moved gradually from the initial coordination of countries' integration ambitions to the promotion of common positions at European level, now focusing especially on a positive agenda with tangible results.

Our motto DYNAMIC VISEGRAD FOR EUROPE represents the main three priorities the Slovak V4 Presidency will be actively advocating, which is a strong Europe, secure environment and smart solutions. And, when it comes to the third priority of smart solutions, here we would like to touch upon and deliver not only the concrete agenda, but also the tools how to deal with it.

Slovakia, together with its partners from the Visegrad Group, is following closely the digital transformation of our societies. It is needless to say that rapid development and subsequent deployment of the emerging technologies creates unprecedented challenges for our citizens, businesses and governments. At present we may be already experiencing the benefits brought by of the uptake of cloud computing, big data, advanced robotics and artificial intelligence almost in every aspect of our lives; from safer cars, more efficient production lines, personalized virtual assistants capable now to speak in a manner undistinguishable from humans, to smart and more comfortable houses. The possibilities and opportunities are now simply endless ...

At the moment, we are witnesses of how is how the capabilities of autonomous and intelligent systems are transferring and expanding from routine and simpler tasks to more cognitive and intellectually natured abilities like argumentation, predictive analyses or hidden pattern recognition making personalized recommendations to our travel plans.

Given its eminent ranking in the novel technological trends across the globe with an enormous impact on working habits and daily lives of people, a phenomenon of artificial intelligence has been rising exponentially over the last few years. The advances in the ICT developments, the achievements in extending the high performance computing capacities and the introduction of smarter algorithms make serious preconditions for a paramount revolution the human society has ever encountered in such a very short span of its existence.

Such technologies are expected to significantly contribute to the biggest problem solving that humanity faces like climate change, ecology, poverty, hunger, lack of adequate healthcare and sustainable well-being or numerous kinds of inequalities. Our business would be able to perform more efficiently, our citizens would be able to make better informed decisions and our governments would be providing enhanced and tailor made public services, thus spreading the benefits for all.

However, since our citizens represent nothing else than data subjects for many of those algorithms, their improper deployment and use could adversely affect human rights and values like privacy, security or equality, just to name a few. It is out of question that we must ensure these new technologies are designed, marketed and used responsibly for common good.

Taking these facts above into consideration, we were eagerly awaiting the European Commission's publication of its Communication on the European Artificial Intelligence Initiative on April 25. The objectives and proposed steps in this European answer are highly shared by Slovakia and its Visegrad partners. Moreover, all four of us signed a declaration on cooperation in Artificial Intelligence with most of EU Member States and issued a detailed joint non-paper on how Visegrad looks into this subject matter. We are equally happy that the European Council in June endorsed the agreed goals in its conclusions and invited the European Commission to work with all Member States on a coordinated plan.

Let me now add a few words, what we do on national level. We plan to submit a revised Digital Strategy – a document that would clearly define national updated stance in the area of digitisation as well as our priorities in application of disruptive and emerging technologies, including artificial intelligence and blockchain in the forthcoming years. The strategy shall seek to guide businesses in digital transformation and to provide conditions and incentives for the balanced uptake of artificial Intelligence solutions. It will also react to its socio-economic aspects encouraging the modernisation of education and training systems in order to align with to the dynamic changes in the labour market. The attention will be paid on setting a supportive level playing field for the new job creation and adequate skills.

Today´s conference will be addressing the challenges in four distinct panels divided in innovations and research part, industry and social implications parts and finally in cyber/hybrid threats part.

I wish you an inspiring event and fruitful discussion.

Richard Raši,
Deputy Prime Minister of the Slovak Republic
for Investments and Informatization

On 25 April 2018 the European Commission presented Communication on Artificial Intelligence for Europe. The Commission is proposing the European approach to make the most out of the opportunities offered by artificial intelligence (AI), while addressing the new challenges AI brings. The countries of the Visegrad 4 have developed a common position that was officially presented during the Digital Day 2018 in Brussels on 10 April 2018.

Visegrad 4 countries' thoughts on the Artificial Intelligence and maximising its benefits ahead of release of the European Commission's Communication on the topic

Artificial intelligence accompanies us in our work and everyday lives – we have safer cars, robots on production lines, modern medical equipment and improved safety on the Internet. Artificial intelligence is nothing new, as the discussions on the subject date back to the 1960s. However, in the last decade, there has been an unprecedented development reached in this field, thanks to increasing computer power, more data available, better algorithms and huge investments accompanied by a growing interest in this topic. Nowadays, AI - based systems can be found in a wide variety of applications from smartphones to stock exchanges. Technology begins to enter the areas where there was no or little need for it before - intelligent systems can recognize, for example, a dangerous situation, faces or emotional states. AI is a fact, and there is no turning back from it, although it is difficult to determine when the true breakthrough moment will occur and what impacts will AI ultimately have on the economy and society. We should be prepared in advance, in order to be able to address the rapid development of technology, so that we can make the most of the opportunities and avoid potential risks to the highest possible extent.

Forecasts say, for instance, that systems based on artificial intelligence used in autonomous transportation can substantially reduce the number of accidents and, as a result, reduce the number of fatalities. AI systems can contribute to achieving better and more accurate results in health diagnoses. Additionally, the implementation of simple robotics in companies may lead to noticeable savings, **not to mention the digitisation of industry and data - driven economy, where the use of AI solutions plays a significant role**. This is a very promising area for European start - ups, especially in the financial, judicial and health sectors. In fact, the challenge of making industrial data accessible for re - use in Europe is as much imminent as it is inevitable. AI is all about data - based innovation, after all. We may also be looking at supporting disruptive innovation. Artificial intelligence could strongly support the reform of public administration in decision - making too, e.g. in preparing regulatory impact assessment and thus create new demand.

Impacts of the AI development are not only related to industrial development as such, including new forms of business activity, but also have the **significant legal, social and ethical dimension**. While on the one hand, AI offers a huge potential, we are at the same time facing the threat that many professions

may disappear or be radically modified within next decades. These challenges will require us to look deep into a number of areas which may seem distant from the purely technical side, such as social security systems or educational models including people's life - long learning approach, while facing the challenges of environment created by AI.

New business models are to be created and the use of machines in our work is likely to shorten our working hours. When contemplating these issues, a few questions immediately pop up. Does this mean that the retirement age will also be lowered? What about social security and, as a consequence, the payment of contributions to our society by fully automated companies? We also wish to emphasise that fundamental rights based on equality stay intact! Social engineering and rating experiments based on the new technologies including artificial intelligence in some leading countries are a troublesome sign for us. Such approach may not be implementable in Europe and should not be carried out at any cost.

The development of AI depends on access to information and data both for public and private sectors. Therefore, initiatives to collect data and making it accessible might be beneficial, as well as those intended to organise access for research units and business research and development and **build trusted ecosystem(s) and/or unified virtual data warehouse (s)for the development of AI technology for interested participants based on Open Data architecture.** This implies the creation of smooth and simplified data collection and management programmes for educational research purposes to enable the development of AI in many domains: medical, financial, biological, energy, industrial, chemical or public sector, while in compliance with GDPR. **Such data warehouses might be pan- European initiatives launched on open standards, mutual recognition of certificates and transparent rules of interoperability.** Companies or businesses themselves could make their raw data available and share them with each other on a voluntary basis and to their mutual benefit in a trusted environment. The use of Open APIs should also be explored in relation to data sources. The creation of data warehouses for the development of AI requires, at EU as well as Member States level, a series of actions such as awareness raising to encourage data sharing in different sectors. Access to as much public data as possible, in a form of open data, should continue to be ensured. It is crucial to ensure that data warehouses are se and confident.

We should keep in mind that AI research, development and its applications are a matter of global scale and key global stakeholders have already been deeply engaged in the emerging AI field. Having stated that, we have to acknowledge that a fierce global rivalry for digital leadership is ongoing and Europe, including V4 countries, and its companies are lagging behind. As the global competition is very intense in the field of artificial intelligence, it is necessary that the EU together with its Member States strengthen their commitment to the development and deployment of AI systems and applications in order to gain a leading and essential role in an international setting and support our companies in gaining the lead in this field. The ultimate goal is to **contribute to formulation of open, internationally**

recognised and enforceable standards for research, development and deployment of ethically designed AI-based systems and solutions in order to maximise benefits for society and avoid or minimise the risks related thereto. As the innovative companies from all over Europe, including V4 companies, benefit from enhanced data access, we find these efforts truly important for the development of our economy.

The development and a continuing improvement of new methods for securing data (including anonymisation or classification of data) should contribute to lowering concerns with regards to access to data sets in which personal data are included. Therefore, **securing privacy and safety of data and developing effective methods to do so is of utmost importance and is a crucial aspect of building trust between users of data.**

Additionally, we need to deal with the legal and socioeconomic dilemmas, which remain unresolved for now: what is AI from a legal point of view? How do we resolve the issue of liability for the damage caused by AI? Who is entitled to copyright for a product made by artificial intelligence? Finally, there are also issues of broadly understood security and trust. Any action in this field must be considered carefully and implemented wisely in order to facilitate the development of innovative and globally competitive European entrepreneurs, while ensuring the security and well - being of citizens.

The potential of artificial intelligence is so great that we have to join forces to make European AI - based products become our European industrial specialisation, while making sure we overcome all related challenges. It is clear that any action with regards to the AI - based products requires collaboration between the relevant stakeholders, including skilled and trained staff in regulatory practices and technical AI experts. At this point in time, the creation of uniform regulatory sandboxes at the EU level seems to be beneficial, since testing and experimentation should always precede the introduction of any specific, legislative or non - legislative, action.[1] The main aim of this is to test first before taking any actions which may harm development of the innovations and innovative companies, including V4 companies.

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[1] We imagine these sandboxes as a digital virtual environment where interested parties from various sectors may experiment in data and algorithms with regards to their new products, services or other ideas. We foresee the sandboxing infrastructure as an integrated development environment (IDE) for quick prototyping and testing new code for digital services, along with set of procedures, processes and policies to enable their adoption and growth. The sandbox will unlock the potential of shared data by integrating data sets, data sources and APIs from other stakeholders, like enterprises and/or start - ups. The use of anonymised and simulated data, processed in a secure test environment, even on a group of selected volunteers and within a set timeframe, will result in making informed decisions by the regulator. The regulator can, on the other hand, observe where there may be a scope for taking actions based on empirical grounds and where there is no need for any intervention. Sandbox is then a mean for streamlining technology related decision of legislative processes and way to produce respective law based on facts, including self - and/or co - regulation.

Digitalisation as such, including the development of artificial intelligence, is a crucial component of enhancing European competitiveness. We need to bear this in mind while we develop new policies, as well as when we talk about **financing and funding**.

Given the specifics of the emerging technologies like AI, it is necessary that any action would be promptly implemented and dynamic enough to be capable of flexible adjustments. We would welcome the **EC guidelines** in this respect. Furthermore, work should be considered notably in the area of liability, taking into account the way recommendations, decisions and actions taken without human interaction along the entire value chain of data processing are happening. At some stage, it will also be extremely important to review public and private law addressing, inter alia, duties of the operators of AI- advanced robots to control them, for example by black box, and find a balance in fundamental rights, for example the right to work or the right to information.

The issue of AI also concerns open standards, which help create interoperability and free flow of data, which artificial intelligence requires in enormous quantities. In consequence, this creates a need for high computing power. **Cybersecurity issues, which definitely have to be addressed, are also hugely important**. We must therefore look at the issue of AI in its complexity.

We believe that all the questions related to AI should be addressed as broadly as possible in the near future, from an economic, social and security perspective. We want to see all stakeholders – European businesses, national and international governmental and non - governmental organisations, citizens and public administrations – involved in the discussion. It is only through an open, holistic and information - rich debate that we will be able to address the most pressing questions and design our approach towards this issue for the coming years. We are counting on the initiative of the European Commission. **It is crucial to set up a European forum for the debate on artificial intelligence (European AI Observatory) as soon as possible**. This may facilitate finding answers to the questions that arise and to design further development paths for the benefit of the citizens and industry of our united Europe, including social and economic impacts. At the same time, it may also identify the related risks and challenges to provide for the appropriate responses.

PRIORITIES:

1.   As part of serious efforts to make **digitalisation a priority of the European Union beyond 2020**, issues related to the rapid development of artificial intelligence should be given a special consideration.

2.   Innovation is data driven – we pledge for the **pan - European initiative on establishing**

an ambitious framework for opening up the data for innovation in order to speed up research, development and implementation of ethically designed AI based systems which will be compatible with GDPR.

3. We emphasise the necessity **of opening a debate about a proper funding mechanism**, taking into account the fact that the development of artificial intelligence is a crucial component of enhancing European competitiveness.

4. We strive for the creation of **uniform regulatory sandboxes** at the EU level that will support R&D in a few promising fields, like medicine, law, financial markets, services, production industry and automotive as well as agriculture, environment protection, water management or even food industry.

5. We acknowledge **the artificial intelligence can strongly support the reform of public administration in decision - making**, e.g. in preparing regulatory impact assessment, so its use should be further analysed and promoted.

6. In this respect we should not ignore the **importance of education and research** in general. We should strive to create an AI - supportive academic environment, by founding new AI - based and multidisciplinary programmes and strengthening the cooperation of the relevant academic and research institutions.

7. It is of a high importance to set up a **European AI Observatory** with all parties involved in AI activities.

8. **Cybersecurity** and trust issues have to be taken into consideration at all the time.

9. We call on the European Commission to **examine the impacts** that the applied AI solutions in industry may bring **to the EU labour force**.

We invite other Member States to join the non - paper to realise ambitious AI project for the future of the European Union.

V4 Conference on Artificial Intelligence

organized by the Slovak Presidency in Visegrad 4 by the Permanent Representation of the Slovak Republic to the EU and the Slovak Liaison Office for Research and Development in collaboration with V4 countries

11 October 2018, 09:00 – 18:00

Permanent Representation of the Slovak Republic to the EU

Avenue Cortenbergh 79, 1000 Brussels

The aim of the Conference is to bring together distinguished experts, professionals, researchers and practitioners from various areas of economy and society, which have been directly confronted with the uptake and real application of artificial intelligence solutions.

Given its eminent ranking in the novel technological trends across the globe with an enormous impact on working habits and daily lives of people, a phenomenon of artificial intelligence has been rising exponentially over the last few years. The advances in the ICT developments, the achievements in extending the high performance computing capacities and the introduction of smarter algorithms make serious preconditions for a paramount revolution the human society has ever encountered in such a very short span of its existence. Or shall we treat it rather as an evolution? The technology now proves that it can significantly improve the work environment or social interactions between people.

We can, nowadays, find the AI-based solutions in a wide variety of applications from smartphones and vehicles to stock exchanges. Expectations say, for instance, that systems based on artificial intelligence used in autonomous transportation can substantially reduce the number of accidents and, as a result, reduce the number of fatalities. These systems can also contribute to achieving better results in health diagnoses. Moreover, digitization of industry and data-driven economy, where the application of AI plays a significant role, will be among the first sectorial enablers. Last, but not least, it is public administration, and not forgetting, military sector, which can make accurate predictions and better decision-making.

09:00	Registration
09:30	Welcome by **Peter Javorčík**, Ambassador, Permanent Representative of the Slovak Republic to the EU
09:35 – 10:15	Opening remarks

- **Miroslav Mikolášik**, Member of the European Parliament
- **Vladimír Šucha**, Director General, Joint Research Centre, European Commission
- **Miloš Koterec**, Adviser for International Affairs of the Deputy Prime Minister of the Slovak Republic for Investments and Informatization

10:15 – 11:45

Workshop Session I: Science, Research and Development in AI

Key words: applied theories, testbeds, labs for policies and data-based decisions, machine learning, a rise of intelligent machines, future applications, what we know and do not know yet, funding programmes, innovations landscape mapping, projections for future, benefits, challenges and risks

- **Ivana Budinská,** Head of Modelling and Simulation of Discrete Processes Department, Slovak Academy of Sciences (Slovakia)
- **Aleksandra Przegalińska-Skierkowska**, Researcher, Kozminski University, MIT Massachusetts Institute of Technology (Poland)
- **Tamás Mészáros**, Researcher, Budapest University of Technology and Economics (Hungary)
- **Pavel Krömer**, Vice Dean, Faculty of Electrical Engineering and Computer Science of VŠB-Technical University of Ostrava (Czechia)
- **Alessandro Annoni**, Head of Unit Digital Economy, EC, DG JRC

11:45– 12:00	Coffee break

12:00 – 13:30

Workshop Session II: Industry and Economy in the realm of AI

Key words: advanced robotics in production process, deployment of IoT, cooperative - connected and automated driving, new areas for undertaking and investments, predictions based on AI, induced changes in traditional sectors of economy, new industrial trends, liability for damages

- **Radoslav Danilák**, Co-founder and CEO, Tachyum (Slovakia)
- **Marcin Chlebus**, Assistant Professor, University of Warsaw (Poland)
- **Péter Benedek**, CEO, Blockchain Competence Center (Hungary)
- **Radim Polčák**, Head of Institute of Law and Technology, Masaryk University (Czechia)
- **Ulla Engelmann**, Head of Unit Advanced Technologies, Clusters and Social Economy, EC, DG GROW

13:30 – 14:45	Lunch break

14:45 – 16:00

Workshop Session III: Societal challenges and labour market impacts by AI

Key words: impact on overall employment, a rise of new professions and which professions will disappear, induced modification of current jobs and working habits, taxation of robots and universal basic income, new ways of living and social interaction, regulatory measures needed or not?

- **Marek Havrda**, Strategic Advisor, GoodAI (Slovakia)
- **Dominika Kaczorowska-Spychalska**, Assistant Professor, University of Lodz (Poland)
- **Róbert Pintér**, Head of Consumer Research, eNET | Assistant Professor, Corvinus University of Budapest (Hungary)
- **Alžběta Krausová**, Legal Researcher, Institute of State and Law, Czech Academy of Science (Czechia)
- **Stijn Broecke**, Senior Economist in the Employment, Labour and Social Affairs Directorate, OECD

16:00 – 16:15   Coffee Break

16:15 – 17:45

Workshop Session IV: AI in the context of cyber warfare

Key words: cyber challenges within the hybrid threats, intelligent non-conventional instruments/weapons for cyber warfare, defense and counter-action possibilities, sophisticated attacks, cooperation between EU-NATO, international law, applicable policies and doctrines

- **Tomáš A. Nagy**, Research Fellow within the Defence and Security Programme, GLOBSEC
- **Patryk Pawlak**, Brussels Executive Officer, EU Institute for Security Studies
- **Botond Feledy**, Director, Institute of Social Reflection TBC
- **General Petr Pavel**, Former Chairman of the NATO Military Committee
- **Jamie Shea**, Deputy Assistant Secretary General for Emerging Security Challenges, NATO | Professor of Strategy and Security of the Strategy and Security Institute

17:45 – 18:00   Closing remarks and conclusions by moderator

PETER JAVORČÍK

Peter Javorčík received his M. Sc. degree in Mechanical Engineering from the Slovak University of Technology in Bratislava and his post-graduate qualification from Comenius University, Institute of International Relations. His professional career has always been linked to the European policy. Since 1992, he has been working at the Ministry of Foreign Affairs on several positions. Between 1999 and 2001 he was a director of Department of the Chief Negotiator for the EU accession and subsequently he was responsible for coordination of the accession negotiations at the Mission of the Slovak republic to the EU. From 2004 to 2007 he was a member of the Cabinet of Commissioner for Education, Training, Culture and Youth. Between 2012 to 2015 Javorčík served as State Secretary of the Ministry of Foreign and European Affairs of the Slovak Republic. Currently he is the Permanent Representative of the Slovak Republic to the EU.

MIROSLAV MIKOLÁŠIK

Miroslav Mikolášik (1952) holds a postgraduate certificate in general medicine, anaesthesiology and reanimation and studied at Medical Faculty of the Charles University in Prague. During his political career, in 1999 he was appointed Ambassador of the Slovak Republic to Canada. In 2004, he was elected Member of the European Parliament, re-elected in 2009 and 2014. As a member of the Christian Democratic Party in the Slovak Republic, which is part of the European People's Party, Miroslav Mikolášik sits on the European Parliament's Committee on Environment, Public Health and Food Safety (ENVI), Committee on Regional Development (REGI) and the Subcommittee on Human Rights (DROI). He is the founder and honorary president of the non-profit association Donum Vitae and he also lectured at the Institute of Medical Ethics in Bratislava. In 1978 - 1990, 1992 - 1994 and 2002 - 2004 he was practising medicine. Currently he serves as chairman of the EPP Working Group on Bioethics and Human Dignity in the European Parliament dealing with ethical aspects of new biotechnologies.

VLADIMÍR ŠUCHA

Vladimir Šucha is Director-General of the Joint Research Centre of the European Commission, its in-house scientific service. He was Deputy Director-General of the JRC between 2012 and 2013. Prior to that, he spent 6 years in the position of director for culture and media in the Directorate-General for Education and Culture of the European Commission. Before joining the European Commission, he held various positions in the area of European and international affairs. Between 2005 and 2006, he was director of the Slovak Research and Development Agency, national body responsible for funding research. He was principal advisor for European affairs to the minister of education of the Slovak Republic (2004-2005). He worked at the Slovak Representation to the EU in Brussels as research, education and culture counselor (2000-2004). In parallel, he has followed a long-term academic and research career, being a full professor in Slovakia and visiting professor/scientist at different academic institutions in many countries. He published more than 100 scientific papers in peer reviewed journals

MILOŠ KOTEREC

Ambassador Miloš Koterec serves as the Diplomatic Advisor of the Deputy Prime Minister of Slovakia responsible for Investment and Informatisation. He oversees, inter alia, international portfolio of disruptive technologies and artificial intelligence. Before joining the Office of the Deputy Prime Minister he worked as the State Secretary of the Ministry of Defence and was responsible for international affairs. He was President of the Economic and Social Council of the United Nations from January 2012 until January 2013. Ambassador Koterec served as Permanent Representative of Slovakia to the United Nations in between September 2009 and April 2012. Prior to that Mr. Koterec was a Member of the European Parliament from 2004 to July 2009. From 2001 to 2004 he worked as Deputy Head of Slovak Mission to the North Atlantic Treaty Organization (NATO) in Brussels, serving as Charge d`affaires a.i. in 2003. Before Mr. Koterec worked at the Ministry of Foreign Affairs of Slovakia at different expert and managerial positions, dealing mostly with international organizations and security issues. He started his civil servant career in 1993. Before he was an Assistant Lecturer and postgraduate student at the Faculty of Electrical Engineering and Informatics at the Slovak University of Technology in Bratislava, from 1986 until 1993. He graduated from the Slovak University of Technology in Bratislava in 1986, Faculty of Electrical Engineering and Informatics. Subsequently, in 1992, he graduated in international trade studies at the University of Economy in Bratislava. In 1994, he completed a post-graduate programme in international relations and diplomacy at the Faculty of Law of the Comenius University in Bratislava.

IVANA BUDINSKÁ

Ing. Ivana Budinská, PhD. graduated from the Slovak Technical University and defended her PhD thesis in the area of Automation at the Institute of Informatics of the Slovak Academy of Sciences. She is a head of the Department of Modelling and simulation of discrete processes. She is a supervisor and a consultant for PhD study at the Slovak University of Technology in Bratislava. Her research interests include discrete systems modelling and simulation, multi agent systems, artificial intelligence, complex systems, and systems theory. Currently she is focussed on application of bio-inspired optimization methods on various domains, e.g. manufacturing, production lines optimization, supply chain management, control and coordination of a group of mobile agents. She is an author and co-author of more than 100 research papers with above 120 citations on them.

PAVEL KRÖMER

Assoc. Prof. Pavel Krömer, Ph.D. graduated in Computer Science at the Faculty of Electrical Engineering and Computer Science (FEECS) of VŠB-Technical University of Ostrava. He worked as an analyst, developer, and trainer in a private company between 2005 and 2010. Since 2010, he has worked at the Department of Computer Science, FEECS of VŠB-Technical University of Ostrava. In 2014, he was a Postdoctoral Fellow at the University of Alberta. In 2015, he was awarded the title Assoc. Professor of Computer Science. He was Researcher at the IT4Innovations (National Supercomputing Center) between 2011 and 2016 and has been a member of its scientific council since February 2017. Since September 1, 2017, he has been the Vice Dean for External Affairs at FEECS. Since 2018, he is a Senior Member of the IEEE. In his research, he focuses on computational intelligence, information retrieval, data mining, machine learning, soft computing and real-world applications of intelligent methods. He was the principal contributor to a broad range of research projects with results published in high-impact international journals such as Soft Computing (Springer), and others published by Elsevier, Oxford University Press, and Wiley. In this field, he has also contributed to a number of major conferences organized by the IEEE and ACM. His citation response includes 402 citations (h-index 9) on the Web of Science, 810 citations (h-index 12) on Scopus, and 1131 citations (h-index 15) on Google Scholar.

ALEKSANDRA PRZEGALIŃSKA-SKIERKOWSKA

Artificial Intelligence expert; Assistant Professor at Kozminski University; Research Fellow at the Centre for Collective Intelligence at MIT. Aleksandra holds a Ph.D. in philosophy of Artificial Intelligence. She is Assistant Professor at Kozminski University and currently Research Fellow at the Centre for Collective Intelligence at Massachusetts Institute of Technology (MIT) in Boston. Recently she was visiting scholar at The New School for Social Research at Brown University in New York City (2014). In 2011 Aleksandra worked as the Chairman of Media Regulation Working Party at the Council of European Union in Brussels. As a William J. Fulbright Scholar Aleksandra also majored in Sociology at The New School for Social Research in New York (2012), where she participated in research on identity in virtual reality, with particular emphasis on Second Life.

Aleksandra's current primary research interest include consequences of introducing artificial intelligence systems to people's social and professional sphere as well as wearable technologies and human/bot interaction.

Aleksandra works, speaks and presents workshops on topics including:
- Human-machine interaction and how to measure it
- Affective and emotional data – opportunities and challenges
- Artificial Intelligence Boom: from scientific discoveries to mass commercialization of products

She has worked with a number of AI-related startups in the past. She is working now as a consultant with a few AI companies (Gastroview, Inteliwise) and as a startup mentor with MIT Enterprise Forum and Start Up Hub Poland, Swissnex Boston and Grow Point acceleration program

TAMÁS MÉSZÁROS

Tamás Mészáros, Ph.D. is an associate professor at the Budapest University of Technology and Economics (BME). His research areas include intelligent agents, information retrieval and controlled natural languages.

ALESSANDRO ANNONI

Head, Digital Economy Unit, European Commission's Joint Research Centre (JRC)

Since 1997 Alessandro Annoni is working in European Commission's Joint Research Centre (JRC). He is the Head of the Digital Economy Unit that provides quantitative and qualitative socio-economic research in support to the Digital Economy, Digital Living and Digital Society. The Unit analyses data value chains and the conditions relating to their development. It also provides the technical coordination of the INSPIRE Directive developing an European Spatial Data Infrastructure for sharing data, information and knowledge.

 Alessandro graduated in Physics from the University of Milan. Before joining the European Commission, he worked for several years in the private sector (1979-1996) and managed companies specialising in advanced studies in Remote Sensing, Earth Observation, Geomatics and Software and Information Systems development.

Since 2006 Alessandro served as co-chair of the Architecture and Data Committee of the Group on Earth Observations (GEO) and is now member of the GEO Program Board. He is currently Vice President of the International Society for Digital Earth (ISDE).

Alessandro has been awarded the 2013 Ian McHarg Medal of the European Geosciences Union reserved for distinguished research in Information Technology applied to Earth and space sciences. In 2016 he received the Digital Earth Science and Technology Contribution Award from Chinese Academy of Science for outstanding contribution to advancing the development of Digital Earth

RADOSLAV DANILÁK

"Rado" Danilak has over 25 years of industry experience and over 100 patents designing state-of-the-art processing systems. In 2016 he founded Tachyum to disrupt markets by solving the processing performance plateau of nanometer class chips.

Rado was founder and CEO of Skyera, a supplier of ultra-dense solid-state storage systems, acquired by WD in 2014. As CEO he won the 2013 Gold Tech Awards Circle for Emerging Company Executive of the Year. At Wave Computing, Rado architected the 10GHz Processing Element of deep learning DPU.

Rado was cofounder and CTO of SandForce acquired by LSI in 2011 for $377M. Rado pioneered enterprise and consumer MLC flash controllers and solved endurance limited by device physics. He was a chipset and GPU architect at nVidia, a CPU architect at Nishan Systems and Toshiba, and chief architect of 64b x86 CPU at Gizmo Tech.

Dr. Danilak is U.S. citizen born in Slovakia, and serves on the Slovak government's Innovation Advisory Board. He is a member of the IDC Technical Computing Advisory Panel, the Forbes Technology Council, and a contributor to TechTarget. He holds a Ph.D in Computer Science and an MS in Electrical Engineering from the TUKE Slovakia, where he taught compiler courses.

PÉTER BENEDEK

Péter Benedek, CEO of Blockchain Competence Center in Budapest, has more than 15 years of successful work experience in the IT industry.

He has been the leader of IBM Hungary and some of the business areas in the Central European region.

MARCIN CHLEBUS

Marcin Chlebus, Ph.D. – Assistant Professor, Department of Quantitative Finance, Faculty of Economic Sciences, University of Warsaw; Head of Data Science Master's programme; Expert in AI/ML and econometrical modelling.

Dr Marcin Chlebus specializes in econometrical and AI/ML modelling. His main field of interest is risk modeling for financial institutions (credit, operational, market, fraud and other types of risk).

He has got a big experience in risk modelling from academic, as well as, business perspective. He took part in many projects for financial industry (banks, leasing companies, brokerage houses, insurance companies and loan companies). Additionally, he participated in many interdisciplinary projects as statistician/econometrician (medical and linguistic data modelling).

RADIM POLČÁK

Radim Polcak is the head of the Institute of Law and Technology at the Law Faculty at Masaryk University (Czech Republic). He is the general chair of the Cyberspace conference; editor-in-chief of the Masaryk University Journal of Law and Technology and the head of the Editorial Board of the Review of Law and Technology (Revue pro právo a technologie). He is a founding fellow of the European Law Institute, a founding fellow of the European Academy of Law and ICT, a panellist at the .eu ADR arbitration court and a member of various governmental and scientific expert and advisory bodies and project consortia around the EU. He also served as a Special Adviser for Robotics and Data Protection Policy to the European Commission. Radim authored or co-authored over

150 scientific papers, books and articles namely on topics related to cyberlaw and legal philosophy.

ULLA ENGELMANN

Ulla Engelmann is currently the Head of Unit for Unit for Advanced Technologies, Clusters and Social Economy within DG GROW, the Directorate General being responsible for Internal market, Industry, Entrepreneurship and SMEs, at the European Commission since March 2017. Her agenda includes Artificial Intelligence and Digital Transformation. Previously, she worked at the Joint Research Centre (JRC), the in-house science service of European Commission, for many years in different functions. She started in the JRC in Ispra (Italy) in 1993 as a post-doc in fusion research, and moved on to manage various units (communication, international relations, and others) in Ispra and Brussels. Dr. Engelmann holds a PhD in analytical and radiochemistry completed at the National Research Centre in Karlsruhe.

MAREK HAVRDA

Economist and sociologist by training (Charles University, Warwick Business School, Johns Hopkins University and Georgetown University). Marek is on a long-term personal leave from the European Commission, where he contributed to the Impact Assessment of new legislation and to the use of behavioural economics for policy formulation. After returning to the Czech Republic in 2012, he has been working on various behavioural science inspired projects, in particular neopas.com, a start-up connecting behavioural sciences and information technology. He has also served as Advisor to the Czech Ministry of Education and Ministry of Finance and as a member of the Regulatory Impact Assessment (RIA) Board he advises the Czech Government on potential impacts of draft legislation. Since 2016 he has been Strategy Advisor at GoodAI, a private R&D company focusing on development of Artificial General Intelligence and AI applications. He has been involved in several global initiatives on the AI governance, including IEEE work on ethically aligned design of autonomous and intelligent systems.

DOMINIKA KACZOROWSKA-SPYCHALSKA

Dominika Kaczorowska-Spychalska has a PhD in economics in the field of management studies. Currently she is employed as an adjunct professor in the Faculty of Management at the University of Łódź (Poland). She is the author (co-author of some parts) of near 60 publications issued both, in local publishing houses and specialist magazines for practitioners as well as in the foreign ones. Her publications combine theoretical and empirical approaches in the area of digital technologies (Internet of Things, Artificial Intelligence, Big Data), digital marketing and social media in business. She specializes in issues concerning digital transformation and its impact on marketing, in particular in the field of human interactions with new technologies and virtualization of customer behaviour (smart society, smart customer, smart human).

RÓBERT PINTÉR

Róbert Pintér is a social scientist (PhD in sociology and MA in political science), online & mobile researcher. He is the Head of Consumer Research at eNET Internet Research & Consulting Ltd. and assistant professor of Department of Information and Communication at the Corvinus University of Budapest. He studies information society and digital trends since 1998. He is former strategic director of Information Society and Trends Research Institute (until 2008) and worked as online strategic director of Ipsos in Hungary (2008-2012). His main interests are socioeconomic phenomena of digital transformation, recently social impacts of artificial intelligence. Robert is a member of the editorial board of Médiakutató (Media Researcher) quarterly and Információs Társadalom (Information Society) quarterly. He is married and the father of three lovely children.

ALŽBĚTA KRAUSOVÁ

Alžběta Krausová is a legal researcher at the Department of Private Law of the Institute of State and Law of the Czech Academy of Sciences, an external lecturer at the Faculty of Informatics of the Czech Technical University in Prague and at the Faculty of Law of the Charles University in Prague, a public speaker, and a member of the Expert group on New Technologies and Liability at the European Commission. Her research specializes on legal aspects of artificial intelligence, robotics, brain-computer interfaces, and merging technology with organic life. Alžběta received her LL.M. in law and legal science from Masaryk University Faculty of Law in 2007 and her LL.M. in intellectual property and patent law from University of Haifa Faculty of Law in 2014. She is currently a doctoral student at the Institute of Law and Technology at Masaryk University Faculty of Law. In the past Alžběta also worked as a researcher at the Interdisciplinary Centre for Law and Information Technology (ICRI) at Katholieke Universiteit Leuven in Belgium.

STIJN BROECKE

Stijn Broecke is a senior economist in the Employment, Labour and Social Affairs Directorate of the OECD. Since joining the organisation in 2012, he has worked on a range of issues, including skills, youth employment and labour market reforms. He now leads the Future of Work initiative at the OECD and is part of the team revising the OECD Jobs Strategy. Prior to joining the OECD, Stijn worked at the African Development Bank, as well as for the UK and Mozambique civil service. During that time, he worked on a wide variety of topics, including higher education, pensions, child poverty, and health policy and planning

TOMÁŠ A. NAGY

Tomáš A. Nagy is a Research Fellow within the Defence and Security Programme at the GLOBSEC Policy Institute (GPI) – which predominantly concentrates on challenges related to the changing European and global security environment. He works on a wide array of security related issues within the context of transatlantic relations, regional (i.e. Visegrad) cooperation, European political integration and nuclear affairs. Outside the security portfolio, his expertise encompasses contemporary British and American politics and British foreign policy in the era of Brexit. Prior to joining the GPI, he was an Associate Fellow with the Central European Policy Institute (CEPI). Tomáš A. Nagy is an alumnus of international relations programmes of the Metropolitan University Prague, Sciences Po Paris and the University of St Andrews. Beyond his academic activities, he participated in numerous future leaders programs and undertook training at a number of institutions dealing with transatlantic and nuclear security related issues. He is a Slovak citizen and speaks fluent English, Hungarian, Czech and understands French.

PATRYK PAWLAK

Patryk Pawlak is the EUISS Brussels Executive Officer. In this capacity, he maintains and develops relations with other Brussels-based institutions. In addition, he is in charge of the cyber portfolio, leading the Institute's cyber-related projects and contributing to its outreach activities. Since June 2016, he is a member of the Advisory Board of the Global Forum on Cyber Expertise. His work on cyber-related issues and the European Union's security policies more broadly has appeared in several peer-reviewed journals and edited volumes. Patryk holds a PhD in Political Science from the European University Institute in Florence and an MA in European Studies from the College of Europe.

BOTOND FELEDY

Mr. Botond Feledy is lawyer, foreign policy expert and commentator, senior fellow at the Centre of Euro-Atlantic Integration and Development (CEID). Currently he is researching cyber security and Russian influence in Central Europe. Recently he was elected as member of the #NewEurope100, a joint initiative of Google, Financial Times, Visegrad Fund and the Polish Res Publica Foundation to choose yearly the hundred most transformative person of the Central European region. He is former director of the Saint Ignatius Jesuit College, he is still working at various instances of the Hungarian public talent management programs. He presides the Institute of Social Reflection as well as offers seminars in IR theory at Pazmany University, Budapest. He was one of the founder and editor in chief of the Hungarian thematic foreign policy news portal called Kitekintő in 2007. He had worked previously at the European Parliament in Brussels, where he co-founded a simulation game initiative "Negotiation Moot" where players participate at virtual European Summits. The "MediaStorm" simulation is another development of his together with a former MTI (Hungarian Press Agency) colleague, where Mr Feledy was head of the foreign affairs desk in 2011-12. Mr Feledy earned his Juris Doctor at Lorand Eötvös University, later he diplomed in French law at Aix-Marseille III and Paris II-Panthéon-Assas in France, and also finished a Master in international relations at Sciences Po Bordeaux, lived one year in Berlin as a DAAD research fellow at the Otto Suhr Institute of International Political Economy at Freie Universität..

PETR PAVEL

General Petr Pavel was appointed Chairman of the NATO Military Committee on June 2015 and served at this position by June 2018.

From July 2012 to May 2015 General Petr Pavel served as Chief of the General Staff of the Armed Forces of the Czech Republic, the highest ranking officer in the Czech Army and the principal military adviser to the Czech Government. In September 2014, General Pavel was elected Chairman of the NATO Military Committee.

General Pavel graduated from the Army College in Vyškov, Czech Republic in 1983 and since then has spent a large part of his military career holding positions in Special Forces, Operations and Intelligence divisions. Throughout his career, General Pavel has held a range of positions from Deputy Military and Air Attaché of the Czech Republic in Belgium to Commander Special Forces to Deputy Director Operations Division at the Ministry of Defence,

In addition, General Pavel has also held his share of positions in International and National joint staffs representing the Czech Armed Forces as the National Military Representative to the US Central Command, as well as National Military Representative of the Czech Republic to SHAPE in Mons, Belgium.

Furthering his education in the United Kingdom, General Pavel has studied at the Staff College, Camberley, the Royal College of Defence Studies, London and obtained an M.A. in International Relations from King's College, London.

JAMIE SHEA

Professor of Strategy and Security of the Strategy and Security Institute.

Prior to joining the University of Exeter, Jamie Shea was an international public servant and a member of the International Staff of NATO for 38 years. His last NATO post was Deputy Assistant Secretary General for Emerging Security Challenges. Other positions included Director of Policy Planning in the Private Office of the Secretary General, Deputy Assistant Secretary General for External Relations, Public Diplomacy Division, Director of Information and Press, Spokesman of NATO and Deputy Director of Information and Press, Deputy Head and Senior Planning Officer in the Policy Planning and Multilateral Affairs Section of the Political Directorate as well as Assistant to the Secretary General of NATO for Special Projects.

Outside NATO, Jamie Shea has been involved with several prominent academic institutions. For 20 years, he was Professor at the Collège d'Europe, Bruges. He was also Visiting Lecturer in the Practice of Diplomacy, University of Sussex, Associate Professor of International Relations at the American University, Washington DC, where he also held the position of Director of the Brussels Overseas Study Programme. He has also lectured at the Brussels School of International Studies at the University of Kent and at the Security and Strategy institute of the University of Exeter, where he was an Honorary Fellow for six years. Jamie Shea is a Senior Transatlantic Fellow of the German Marshall Fund of the United States and a Senior Fellow at the London School of Economics, where he teaches a course on crisis management and political communication.

Jamie Shea is a regular writer, lecturer and conference speaker on NATO and European security affairs and on public diplomacy, political communication and many other areas of contemporary international relations. He holds a D.Phil. in Modern History from Oxford University (Lincoln College), 1981. Amongst his many associations and memberships, Jamie Shea is a member of the Advisory Board, Security and Defence Programmes at Chatham House, a member of the Policy Council at the World Economic Forum in Geneva and founder and member of the Board, Security and Defence Agenda Brussels and Friends of Europe. He serves on the Board of the Danish Defence College, Copenhagen, and the Académie Diplomatique Internationale in Paris. He is currently a Senior Advisor at the European Policy Centre and a Senior Fellow at Friends of Europe. These are two of the most active and influential policy think tanks in Brussels.

Jamie Shea is a recipient of the Golden Eagle medal of the Republic of Albania and the Linden medal of the Czech Republic. He was European Communicator of the Year in 1999 and in 2016 was awarded the International Prize for Human Rights of the AAB University in Kosovo. He has also been awarded two honorary doctorates: one from the University of Surrey and the other from the National School of Public Administration in Bucharest, Romania. He is a recipient of the NATO medal for Meritorious Service.