



Science, Technology and Innovation Directorate

## Artificial Intelligence for Science, Industry and Society (AISIS)

### - Policy Session

October 23<sup>rd</sup>, 2019

#### Introduction

The Symposium “Artificial Intelligence for Science, Industry and Society” will take place on **21-25 October 2019** at the Universidad Nacional Autónoma de México (UNAM), Mexico City, Mexico. The conference is organized by the Instituto de Ciencias Nucleares, the Coordinación de la Investigación Científica (UNAM), and the CERN Open Lab. The organisers have asked the OECD to organise a half-day workshop on related policy aspects on the morning of October 23<sup>rd</sup>. In the following we explain the overall concept of the conference, followed by a concept of the policy session and a draft agenda.

#### Aim and scope of AISIS conference

Artificial intelligence (AI) already plays a major role in all stages of the scientific process. For example, AI assists radiologists to help recognise cancers in medical imagery and helps particle physicists identify patterns in immensely complex events. Deep learning, high-performance computing, ‘big data’ and open-source softwares are transforming the scientific landscape at an ever-increasing pace.

This rapid evolution raises significant issues:

- Can AI contribute to improving scientific productivity?
- Will AI’s greatest impacts on science be limited to stages of science that can be neatly compartmentalised into sequential steps, such as with experimentation ? Can AI go even further, perhaps even filing patents on the path to commercialisation?
- What are the best ways to productively leverage the complementarity of human and artificial intelligence?

The AISIS symposium aims to bring together senior representatives industry and research to review the perspectives for applying AI to different disciplines - from economics to astrophysics, biology, tele-medicine, archeology and others. It will address the following broad topics:

- *Reinforcement learning* – from pattern recognition to experiencedriven decision making;
- Natural language processing;
- The teaching of ML and quantum computing at different levels;

- Required computing resources in the different domains;
- The future of large data analytics;
- Collaborative systems and human-machine interactions;
- Algorithmic game theory and computational social choice;
- Quantum and classical algorithms for deep learning and AI;
- Future perspectives.

### **Policy session on October 23<sup>rd</sup> (morning)**

Amid these developments, many concerns pertain to governance, ethical and societal issues. These issues range from questions of transparency and explainability (for instance being able to explain and verify the operation of algorithms), to security (for example ensuring the robustness and dependability of AI systems), to privacy (not infringing inappropriately on the privacy of users or third parties), to broad questions of governance (such as ensuring that AI systems ultimately operate in ways that align with a broad range of societal preferences).

In addition, in a domain where technology sometimes moves faster than policy, capabilities are needed such that policies and institutions anticipate and adjust to changing circumstances.

The OECD's Principles on Artificial Intelligence – the first intergovernmental standard on AI – promote AI that is innovative and trustworthy and that respects human rights and democratic values. They were adopted in May 2019 by OECD countries and partner economies, and provided the basis for the G20 AI Principles endorsed by Leaders in June 2019. Launching early 2020, the OECD AI Policy Observatory (OECD.AI) helps countries encourage, nurture and monitor the responsible development of trustworthy AI systems. The Observatory combines resources from across the OECD with those of partners to provide trends and data; multi-stakeholder and multidisciplinary, evidence-based policy analysis on AI; and to allow countries to compare policy responses, learn from each other's experiences, monitor collective progress and develop good practices.



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### Proposed session agenda

23 October 2019 – UNAM, Mexico City

**09:00**      **Introductory remarks by** Min. Judith Arrieta, Minister of the Foreign Service at the Chief of Staff's Office of the Secretary of Foreign Affairs of Mexico and Alan Paic, Senior Policy Analyst, Science and Technology policies, OECD

**09:15-10:45**      **Panel 1: Artificial Intelligence strategies – preparing for the future**

*Panel to be run “Davos-style”, i.e. starting with 3 min. interventions of speakers presenting their main experience, followed by a discussion around 3 key questions:*

- Based on the conceptualisation and development of your national AI strategy, what do you consider is the most important and/or the most difficult “ethical” issue that governments must address?
- As AI and its applications evolve, new governance challenges will arise. What foresight mechanisms might be recommended to anticipate such challenges and what role must the private sector play?
- Most AI-related R&D is undertaken by a small number of firms. In what ways does this reality inform and shape the public R&D element of national AI strategies?

*Speakers*

- Andreas Hartl, Head of Division on Artificial Intelligence and Data Economy, German Ministry of Economy – responsible for the implementation of the German AI strategy, and drafting a Blockchain strategy.
- Ana Valcarel Orti, INRIA and Project Manager, Co-ordination of the French national plan of research in AI
- Cristina Martínez Pinto, AI for Good Lab Director at CMINDS (NGO) background paper for a future AI strategy in Mexico
- Estelle Parker, Australian Embassy in Mexico - AI ethics in Australia
- Ashley Casovan, Executive Director of [AI Global](#), formerly Director of Data Architecture and Innovation at the Government of Canada – Canadian AI strategy.

**10:45-11:15**      **Coffee break**

**11:15-13:00**      **Panel 2: New policy ideas – how can we harness AI for societal progress?**

*Panel to be run “Davos-style”, i.e. starting with 3 min. interventions of speakers presenting their main experience, followed by a discussion around 3 key questions:*

- AI is only as useful as the quality and volume of data it is trained on. Many AI-intensive start-ups master the technology but are constrained by data access. What are the best ways to enhance data availability such that AI-intensive firms can work on a broad set of problems relevant to the public interest?
- Fully explainable AI is not yet a reality, even though some progress is being made. What are the best ways to address public concerns over transparency given the current state of AI’s development ?
- AI today is an extremely fast-moving technology. How can governments best ensure that adjustments in policies and institutions match the rapidity of change?
- We need to ensure that AI technologies and tools will be implemented in a responsible and ethical manner. How do we balance innovation and protection of the public and environment?

*Speakers*

- Julien Chiaroni from General Secretariat for Investment (Office of the Prime Minister, France) – developing trustworthy AI.
- Mirjana Stankovic, Vice-President, Emerging Technologies at Tambourine ventures – what can be done when policies develop more slowly than technology?
- Ashley Casovan, Executive Director of [AI Global](#), a non-profit dedicated to responsible implementation of AI will talk about responsibility and ethics with AI, as well as future certification of AI technologies.
- Cédric Bourrasset, Artificial Intelligence product manager at ATOS will speak about ethical choices in videosurveillance applications
- Prof. Andrea Bertolini, Dirpolis Institute and University of Pisa will speak about regulation in AI and robotics
- Andrea Escobedo Lastiri, IBM, will talk about policy issues and AI ethics as practiced by IBM
- Yan Zhenfang, General Director, Intelligent Computing Dept., Huawei, will speak about the experience of Huawei