AI Japan R&D Network

DWIH Tokyo
Land der Ideen

AMBASSADE DE FRANCE AU JAPON
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Fraternité

The 3ʳᵈ Japanese-German-French AI Symposium

– AI for Planetary Challenges in the Anthropocene –

At the 3rd trilateral symposium on Artificial Intelligence (AI), stakeholders from academia, industry and policy-making will discuss measures to tackle planetary challenges that humankind is facing in the Anthropocene and share their visions for realizing a sustainable society.

Following the 1st and 2nd trilateral symposia in 2018 and 2020, which welcomed more than 150 distinguished speakers and 1,300 participants, the 3rd symposium in Tokyo will feature plenary and parallel sessions on various current AI topics and provide networking opportunities to further promote trilateral collaboration.

Date:	27–28 October 2022 (10:00-18:00 JST)
Venue:	Miraikan (The National Museum of Emerging Science and Innovation) / Tokyo
Organizers:	AI Japan R&D Network
	DWIH Tokyo (German Centre for Research and Innovation Tokyo)
	Embassy of France to Japan
Language:	English

Main Organizers

AI Japan R&D Network
DWIH Tokyo (German Centre for Research and Innovation Tokyo)
Embassy of France to Japan

Co-organizer

Japan Science and Technology Agency

Website

www.trilateral-ai-symposium.com

Social Media Coverage

#Trilateral_AI

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- AI & Cybersecurity
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- Wrap-up & Closing Remarks

Program

Day 1 – October 27, 2022 (Thursday)

10:00 – 10:30	**Opening Remarks** Prof. Masahiro Watanabe H.E. Dr. Clemens von Goetze H.E. Philippe Setton Dr. Hiroaki Kitano
10:35 – 12:00	Plenary Session: AI for Climate Change Adaptation
12:00 – 13:00	Lunch Break
13:00 – 14:30	Parallel Sessions

	AI for Sustainable & Smart Cities	AI for Disaster Risk Assessment	AI in Agriculture

14:30 – 15:00	Coffee Break
15:00 – 16:25	Plenary Session: AI for a Sustainable Society
16:30 – 18:00	Special Session: Presentation of Japan-Germany-France Joint Research Projects
18:15 – 20:00	Reception (for speakers and organizers)

Program

Day 2 – October 28, 2022 (Friday)

10:00 – 11:25	Plenary Session: Geopolitics & Governance of AI
11:30 – 12:30	Special Session: AI Shooting Stars (Startup Pitches)
12:30 – 13:30	Lunch Break
13:30 – 15:00	Parallel Sessions
	AI for Biodiversity / Trustworthy AI / Education for an "AI Ready Society"
15:00 – 15:30	Coffee Break
15:30 – 17:00	Parallel Sessions
	AI & Cybersecurity / Regulation & Democracy of AI / AI for Health
17:05 – 18.00	Wrap-up & Closing Remarks

Welcome messages

Hiroki Matsuo

Vice – Minister / Secretary General for Science, Technology and Innovation Policy, Cabinet Office, Government of Japan

I am pleased that this symposium, which is in the third round, can be held again on site this time. I would like to express my deep gratitude for the great efforts made by the stakeholders, including the organizers of the symposium.

The COVID-19 pandemic has caused major changes in societies all over the world. In Japan, there are major impacts on health and medical care for the people and the economy. On the other hand, efforts toward digitalization have become active in various fields. In a digitized society, AI is an important technology that is key to both economic development and solving social issues.

In Japan, "AI Strategy 2022" was formulated in April 2022. To contribute to global problem solutions (SDGs), overcome social issues unique to Japan, and improve industrial competitiveness, various initiatives are being promoted to enhance social implementation and to deal with imminent crises such as pandemics and natural disasters.

There is a lot of room for technological improvement in AI, and new breakthroughs are awaited. In an environment of good global intellectual circulation, creation of innovation and human resource development are required. On the other hand, along with the expansion of AI use, issues related to AI use, such as ethical issues, have become recognized. I hope that further deepening of cooperative relations among the three countries through the discussions at this symposium will become the driving force for solving these issues.

Prof. Dr. Joybrato Mukherjee
President of the German Academic Exchange Service (DAAD)

Sharing similar values, our three countries have tremendous potential for collaboration in Artificial Intelligence (AI).

In view of the enormous challenges in the Anthropocene - from pandemics to the consequences of climate change and biodiversity loss - it is more necessary than ever for all countries to act together as a global community. However, since Russia's invasion of Ukraine, we live in a new 'world disorder,' and it is important that we stand up for democratic values, for peace and for freedom of thought. These are values we are sharing with our Japanese and French partners and they are also reflected in this event series.

In 2018, DWIH Tokyo initiated the first Japanese-German-French AI symposium, culminating in the announcement of a joint statement for intensified collaboration based on a human-centered approach. In 2020, the French side took the lead in the second trilateral symposium on the topic of Human-Centric AI. Now, the Japanese side took the initiative for this third trilateral symposium on "AI for Planetary Challenges in the Anthropocene". I would like to thank all our partners for the wonderful collaboration leading up to this event.

Germany is committed to promoting world-leading expertise in AI. In recent years, 100 new professorships in AI and six national AI competence centers have been established. In addition, just this year three "Zuse Schools" have been selected, each combining excellent, research-based education at Master's degree and PhD level with supervision from mentors from both academia and industry. The Zuse Schools are welcoming international applicants and will also be represented at this symposium.

This symposium offers a wide array of perspectives and provides an outstanding forum for networking between Japan, Germany and France, as well as between science, industry and policy-making. I wish all participants fruitful exchanges, vibrant discussions, and inspiring new ideas!

Prof. Dr. Ina Schieferdecker

Director General, Federal Ministry of Education and Research (BMBF)

After the last two AI symposia, one of which could only take place virtually due to the effects of the pandemic, I am now glad that this valuable event will continue and will again take place in presence. I would like to express my appreciation to all the people involved and the organising team.

We live in difficult times and difficult times require innovative technologies, solutions and creative minds to implement them. AI is one such technology. In Germany, with the AI Strategy from 2018 and its update in 2020, we have created the framework conditions to build an AI ecosystem that drives cutting-edge research, attracts young talents and thus fuels research transfer, the founding of AI start-ups, networking and cooperation. We have reached milestones acquiring 100 new professors for AI for German Universities, in supporting SME in taking up AI developments and in establishing AI competence centres for a consistent and long-term perspective for AI research in Germany.

Especially, for the development and use of technologies such as AI, strong partnerships that operate in a common value system are essential in order to use AI to master pressing challenges such as climate change, digital transformation, etc., and to act for the benefit of humans. The cooperation with Japan and France in the past have led to a strong alliance. To this end, it is important that we remain in exchange, advance the collaborations and increase our joint visibility. The AI Symposium is a wonderful opportunity to engage in exchange and discuss new approaches.

Vito Cecere
Director for Research and Academic Relations Policy, Department for Culture and Communications, German Federal Foreign Office

I want to congratulate the AI Japan R&D Network, the German Centre for Research and Innovation in Tokyo and the French Embassy in Japan, for organising the Trilateral Symposium on Artificial Intelligence for the third time.

The Federal Foreign Office is proud to support the network of six German Centres for Research and Innovation worldwide. They are an integral part of our science diplomacy, through which we connect science and foreign policy.

Global challenges like climate change and sustainable development can only be mastered through intensive international cooperation in the fields of science and politics. That is the reason why the German Government, and the Federal Foreign Office in particular, are now placing special emphasis on our climate diplomacy, which encompasses a very wide range of policies, including the fostering of climate-friendly and sustainable technologies.

France, Germany and Japan share common values and face similar challenges in their societies. Artificial intelligence can be an important tool in understanding, tackling and solving the big challenges of our time. Therefore, I very much welcome the fact that in its third edition the trilateral symposium will broaden its perspective under the title "AI for Planetary Challenges in the Anthropocene".

I want to thank the three institutions, the AI Japan R&D Network, the Embassy of France in Japan and the German Centre for Research and Innovation, for making this important symposium possible once again. I wish all of you, the organisers, the many distinguished speakers and the participants, very fruitful discussions full of exchanges of knowledge and ideas about the potential of artificial intelligence for improving and safeguarding our world!

Claire Giry

Director General of Research and Innovation, French Ministry of Higher Education and Research

In November 2018 was launched the first edition of the France Germany Japan symposium on Artificial Intelligence. Our three countries had just announced their national strategy and we saw that we shared common values and faced comparable social challenges.

Last year, France announced the second phase of its strategy on AI, mainly aiming at turning R&D potential into economic success. In line with the ambition of France 2030, talent is at the heart of this strategy, which will foster clusters of excellence and include an international scope reflecting France's ambition to play a reference role in the field of AI. As part of a broader training strategy, the plan will provide our ecosystem of startups and companies with the skills they sorely need for their ongoing transformation and competitiveness in some specific emerging technologies. In particular, embedded AI, edge computing and trustworthy AI, are essential technologies for the development of cutting-edge innovations in many key sectors such as industry 4.0, energy, transportation or healthcare industry.

However, Artificial Intelligence has an impact on our behavior, on our ways of life, on our societies as well as on the environment, impact that we are just beginning to measure. It also raises a number of ethical issues and could even call into question our democracies.

This is why we need to create adequate systems, regulations and funding frameworks in order to restructure education, training, research and adapt them to the transformations brought by AI. We should never forget that the key driver for innovation should not only be technological progress, but progress for the benefit of all of humanity and our planet itself.

In this context, during the 3rd edition of this symposium, players from all backgrounds, whether they are from different countries, from industry or academia, scientists or humanists, will share their vision on the need to cooperate and exchange, in order to combine our efforts to build a world that benefits from the progress related to AI.

Finally, I am delighted with this trilateral cooperation, with valuable partners for France: of course, our German neighbors with whom cooperation in the field of artificial intelligence is accelerating, and Japan, to which France is going to pass on the presidency of the 3rd year of the Global Partnership for AI, Japan who will also host the 3rd edition of the GPAI summit in Tokyo in November 2022.

I wish you all an excellent symposium and fruitful exchanges.

Direction Générale de la Recherche et de l'Innovation
La Directrice Générale

Claire GIRY

Opening Remarks

Speakers

Prof. Masahiro Watanabe

Professor, Division for Climate System Research, Atmosphere and Ocean Research Institute (AORI), The University of Tokyo

H.E. Dr. Clemens von Goetze

Ambassador of the Federal Republic of Germany to Japan

H.E. Philippe Setton

Ambassador of France to Japan

Dr. Hiroaki Kitano

Chairperson of the AI Japan R&D Network; Senior Executive Vice President and CTO, Sony Group; President and CEO, Sony Computer Science Laboratories Inc.

AI for Climate Change Adaption

Outline

Despite the initiatives taken so far to mitigate the effects of climate change, we, in fact, are already facing its consequences. The timescales of these effects include short-term but dramatic societal problems as well as long-term ecological and socio-economic effects. Defining the best courses of action to be implemented in order to help ecosystems, societies, and infrastructures to adapt to all the various consequences of climate change is an extremely complex issue, requiring the intersection of a multitude of scientific fields, including the social sciences and humanities. How could AI help policymakers design realistic strategies and implement effective policies, at local and global scales? How could AI help inform civil society to anticipate impact? What role can companies and start-ups play to accompany public policies?

In this plenary session, experts from the three countries will share their visions of how AI can contribute to better adaptation and ultimately to greater societal resilience in regard to the effects of climate change and the benefits of developing international cooperation.

Speakers

Prof. Dr. Ronan Fablet (Chair)
Professor, IMT Atlantique

Prof. Masahiro Watanabe
Professor, Division for Climate System Research, Atmosphere and Ocean Research Institute (AORI), The University of Tokyo

Prof. Dr. Prof. h.c. Andreas Dengel
Executive Director DFKI GMBH, Kaiserslautern & Prof. for Science TU Kaiserslautern

AI for Sustainable & Smart Cities

Outline

Cities play a key role in the transition to a sustainable society: While worldwide urbanization continues, cities already consume about 78% of the world's energy and produce more than 60% of greenhouse gases. At the same time, policymakers and scientists provide inspiring visions of carbon-neutral smart cities, which employ a variety of AI applications, often based on embedded AI; for example, to increase energy efficiency, carbon-free mobility and resilience. Most people in Japan (92%), France (81%), and Germany (78%) already live in cities. Japan makes smart and sustainable cities a core element of its "Society 5.0."

In this session, experts from the three countries will provide examples of how AI can help decarbonise cities, discuss challenges, and look for opportunities to collaborate internationally.

Speakers

Prof. Dr. Katharina Morik (Chair)
Professor, TU Dortmund, Germany

Prof. Nobuo Kawaguchi
Professor, Institutes of Innovation for Future Society, Nagoya University

Prof. Noboru Koshizuka
Professor, Interfaculty Initiative in Information Studies, The University of Tokyo

Dr. Martin Memmel
Head of SmartCity Living Lab at the German Research Center for Artificial Intelligence (DFKI)

Dr. Rémy Rigo-Mariani
Research Scientist, Université Grenoble Alpes, CNRS, G2Elab

Dr. Levent Gürgen
CEO of Kentyou; President of Urban Technology Alliance

AI for Disaster Risk Assessment

Outline

Due to climate change, the frequency and magnitude of abnormal weather events, such as storms, droughts, floods, heat waves, and cold waves, are increasing. To address this global crisis, it is essential to collect, share, and use large-scale data through international collaboration. In addition, artificial intelligence technology based on massive data obtained through accurate observations, continuous measurements or voluntary data (e.g. social media) is essential to predict disasters and the damage they cause, and to develop strategies that can be applied to various situations. Moreover, building digital architectures that use data is essential to enable rapid and real-time response to disasters.

In this session, experts from the three countries will discuss how AI technology can be used to prepare for these risks and respond quickly when faced with them.

Speakers

Dr. Masashi Matsuoka (Chair)
Professor, Department of Architecture and Building Engineering, School of Environment and Society, Tokyo Institute of Technology

Dr. Minh-Son Dao
Senior Researcher, Big Data Integration Research Center, National Institute of Information and Communications Technology (NICT)

Dr. Carolin Klonner
Postdoc at the Chair of GIScience, Institute of Geography, Heidelberg University

Dr. Ing. Ralph Matthias Debusmann
Chief Technology Officer, Forecasty.AI

Prof. Dr. Marc Bocquet
Professor at École des Ponts; Deputy director of CEREA, joint laboratory of EdF R&D and École des Ponts.

Dr. Cécile Gracianne
Data analyst, BRGM

AI in Agriculture

Outline

Agriculture is one of the world's major contributors to climate change and, at the same time, is directly impacted by its consequences. The sector also faces the immense challenge of meeting the rising food demand of a growing world population despite a lack of human resources, especially in countries like Japan, Germany, and France. AI, and more specifically embedded AI, can pave the way to sustainable farms that engage in environmentally friendly production in a manner as efficient as mass production.

In this session, experts from the three countries will discuss which milestones need to be passed to leverage the potential of AI for sustainable and environmentally-friendly agriculture on a global level. They will also discuss ongoing collaboration between Japan, France, and Germany in this field and how these collaborative efforts can and should be improved in the future.

Speakers

Prof. Dr. Sonoko D. Bellingrath-Kimura (Chair)
Co-Head of Research Area Land Use and Governance, Leibniz Centre for Agricultural Landscape Research (ZALF)

Dr. Yuko Harayama
Professor Emeritus, Tohoku University

Dr. Takahiro Kawamura
Administrator of Data Management, Strategic Planning Headquarters, National Agriculture and Food Research Organization （NARO）

Prof. Dr.-Ing. Cornelia Weltzien
Professor at TU Berlin, chair of Agromechatronics, and head of department "Engineering for crop production" at Leibniz Institute for Agricultural Engineering and Bioeconomy

Alexis Comar, PhD
CEO of HIPHEN SAS

Julien Diot
Ph.D Student, The University of Tokyo; Data-Scientist, Listen-Field Inc.

AI for a Sustainable Society

Outline

The transition to a sustainable society is essential to ensure peace and prosperity for people around the globe, and the 17 Sustainable Development Goals (SDGs) illustrate how various factors must be interconnected to achieve sustainable development. What role can AI play in this transition? High hopes are placed on AI to solve technical challenges, such as environmental and health problems, but AI applications can also hinder social progress by increasing discrimination and violating individual freedom.

In this plenary session, experts from the three countries will share their visions of how AI can contribute to the transition to a sustainable society.

Speakers

Prof. Dr. Prof. h.c. Andreas Dengel (Chair)
Executive Director DFKI GMBH, Kaiserslautern & Prof. for Science TU Kaiserslautern

Dr. Kentaro Torisawa
Fellow, National Institute of Information and Communications Technology (NICT)

Prof. Dr. Elisabeth André
Full Professor, Chair, Augsburg University, Germany

Dr. Marc Duranton
French Alternative Energies and Atomic Energy Commission (CEA)

Presentation of Japan-Germany-France Joint Research Projects

Outline

There has been remarkable progress in AI research in recent years and the accomplishment of AI brings a tremendous opportunity. Under this situation, "Trilateral AI Research" project in the field of Artificial Intelligence has been coordinated by Japan, Germany and France, and now proceeded by Japan Science and Technology Agency (JST), German Research Foundation (DFG, Germany) and The French National Research Agency (ANR, France).

9 research teams have been selected and now they are working on research as scheduled from FY2020 to FY2023. This time, these 9 teams will intermediately present their research achievement.

Projects

- **AI for Aging societies: From Basic Concepts to Practical Tools for AI-Facilitated Cognitive Training (AI-Cog)**

  This collaborative research aims to optimize the decodable information about the functional state of the brain, to identify biomarkers that indicate the risk for cognitive impairments and different forms of dementia, and use these improved methods to guide AI facilitated cognitive training. We will develop novel, dedicated machine learning (ML) methods and adapt them to human brain signals, will make our methods in an open source software, focusing on unsupervised learning, data augmentation, domain adaptation, and interpretable machine learning models.

- **Artificial Intelligence for Human-Robot Interaction (AI4HRI)**

  Europe and Japan both face problems of shrinking and aging population, and using social robots is seen as a possible way of alleviating demographic issues. Robots need to be able to interact with people and this is studied in the field of Human-Robot Interaction (HRI). But dealing with humans is difficult, and HRI is still not making enough use of AI technologies. The goal of the AI4HRI project will be to both develop and integrate several AI methods which will allow social robots to appropriately deal with humans around them. This includes 3 abilities that we believe are currently missing in HRI: knowledge management and reasoning, learning of social skills, and planning and executing joint human-robot actions. Each partner in the project is a leading expert in one of these fields and the project will benefit from their synergy. Importantly, the above abilities will be combined into a single open-source architecture and shared with other researchers.

- **Learning Cyclotron (LeCycl)**

  This collaborative research is about "Learning Augmentation". Its goal is to propose and exprimentally validate a new model called "Learning Cyclotron", which covers not only the self-learning with advance sensing technologies but also nudging knowledge transfer between learners to make the model disruptively innovative.

- **Research on Real Time Compliance Mechanism for AI (RECOMP)**

  This collaborative research aims to enhance reliability of AI in society to realize real time compliance mechanism such as legal and ethical norms using logic programming technology.

- **Enhanced Data Stream Analysis: combining the signature method and machine learning algorithms (EDDA)**

  By introducing the concept of iterated integrals (signature) in rough path theory to machine learning algorithms, this project aims to develop a highly interpretable framework of time-series analysis that can deal with nonlinear effect properly and to find a new direction of applications to environmental sciences. Because the new framework of statistical analysis is based on rough path theory and machine learning, it is indispensable for the development to gather the experts in rough path theory from German and French side, the experts in machine learning from French side, and the experts in applied data analysis from Japanese side.

- **Adaptive Artificial Intelligence for Human Computer Interaction (PANORAMA)**

  This collaborative research aims at proposing a new research methodology for Machine-Learning-based Human-Computer Interaction by focusing on the concept of user adaptivity.

- **Understanding and Creating Dynamic 3D Worlds towards Safer AI (TOSAI)**

  This collaborative research aims to enable the generation of photorealistic, critical and rare scenes of dynamic environments. To achieve this, the technical goal is to push the state-of-the-art for rich 3D representations, including appearance, geometry, and dynamics, as well as semantic aspects.

- **AI empowered general purpose assistive robotic system for dexterous object manipulation through embodied teleoperation and shared control (CHIRON)**

  This collaborative research investigates challenges in tele-operation of robots such as delay and lack of feedback sensation through combination of embodiment and smart AI. The research will enable elderly and patients to operate robots intuitively and would lead to reconstruct social welfare system to improve their independent life.

- **Knowledge-enhanced information extraction across languages for pharmacovigilance (KEEPHA)**

  This collaborative research aims to develop Artificial Intelligence methods that digest scientific knowledge from various text sources in multiple languages, and integrate them into knowledge bases. Adverse Drug Reactions are taken up as an application for extracting relations between drug and medical problems.

Geopolitics & Governance of AI

Outline

How AI technology is utilised depends largely on the socio-political environment of a society and on who owns and controls the technology. While AI technology has great potential for wealth creation and improvement of human life, it could, if misused, reinforce wealth inequality, bring about an extreme surveillance society, transform military technology, and intensify competition amongst nations. AI technologies could also increase social divisions and vulnerability, due to manipulation of public opinion, and infringement of personal privacy and dignity. In particular, the oligopoly of AI technology by a nation and/or big capital hinders the use of AI in broad areas that would otherwise benefit from it.

France, Germany, and Japan have shared the conception and have been discussing how we can join forces to develop AI for Social Good under the banner of "Human-Centric" AI.

In this session, by deepening this vision, experts from the three countries will discuss how to form social consensus in our diversified society regarding balance of regulations and freedom of individuals and companies, and how the three countries can share resources and ideas to achieve our vision.

Speakers

Prof. Dr. Junichi Tsujii (Chair)
AIST Fellow, and Director, Artificial Intelligence Research Center, National Institute of Advanced Industrial Science and Technology (AIST)

Yoichi Iida
Deputy Director General for G7 and G20 Relations, Global Strategy Bureau, Ministry of Internal Affairs and Communications, Government of Japan; Chair of Committee on Digital Economy Policy, OECD

Prof. Dr.-Ing. Ina Schieferdecker
Director General, Federal Ministry of Education and Research (BMBF)

Prof. Dr. Stéphane Grumbach
Research Director, INRIA

AI Shooting Stars (Startup Pitches)

Outline

Japanese, German and French start-ups that utilize artificial intelligence in their businesses will pitch on their cutting-edge products and services.

Speakers

AiCAN Inc.

Child abuse is listed in SDG 16.2.. Responding to child abuse is a challenging task because it requires quick and appropriate decision-making in the face of only incomplete and uncertain information. Our company is a group of professionals with domain knowledge of child welfare and data analysis skills. We provide one-stop support for improvement of child protection by accompanying the client in setting up on-site issues, providing business data creation applications, and supporting decision-making through AI analysis of data accumulated from the applications and feedback to child protection workers. We contribute to child safety by integrating the power of people and digital technology.

Fairy Devices Inc.

Fairy Devices provides an AI-based end-to-end solution to enterprises for industrial digital transformation. Our solution covers from a unique neck-worn wearable device to cloud and AI.

Our device allows wearers to use their both hands and share what they do with remotely located assistant(s) real-time. Remote assistants can give timely advice or suggest necessary actions, based on this point-of-view video from 4K camera in front of the device. This device part only won three Innovation Awards at CES2022.

Our strong voice AI at edge device removes industrial noises and recognizes conversations effectively, automatically annotating video data with texts converted from speech and generating truly eligible data for machine learning. That builds a strong AI expert at cloud for operational optimization and task automation.

Synapse Medicine

Synapse Medicine's mission is to provide everyone access to the best medicine. The startup, which collaborates closely with the largest French university hospitals, has developed a Medication Intelligence platform

dedicated to proper drug use. As a leader in its category, the solution is 100% independent from the pharmaceutical industry and is used today by thousands of healthcare professionals.

Kentyou

Kentyou has been founded as a spin-off from CEA, a world leading research institution from France, to help cities for their digital transformation enabling them with necessary software platforms and tools to face their important social, economic and environmental challenges. Cities are struggling to get value out of big amount of data available everywhere (IoT devices, open data, citizen applications, etc.), because of the quantity, variety and heterogeneity of data. Kentyou has built an AI-empowered software platform which can quickly and easily connect to a large number of data sources, unify their data and process them to obtain high level actionable information to assist the cities in their decision making process.

HIPHEN

Hiphen is a spin-off from INRA and a member of UMT CAPTE, a scientific research unit that develops tools and methods for the efficient use of sensors and remote sensing in agriculture.

Hiphen was created in 2014 and offers a wide range of plant phenotyping products and services to various agriculture players – from breeders to wholesalers, agro-industry companies, and research institutes.

The company works has 3 main solutions in its catalog: Phenoscale a turn-key solution for drone and satellite data processing of experimental plots, Phenomobile an automated tractor-based phenotyping solution, and Phenostation allowing to measure crops in controlled environment (vertical farming) and fruits quality in a post-harvest mode.

Hiphen's team of 25 engineers, agronomists, and software developers continue to largely invest in R&D efforts, notably to ensure that the latest AI techniques are supplemented by the knowledge of plant mechanics. For instance, we have developed Cloverfield, a big data SAAS platform using deep learning to process the data into meaningful insights for our clients.

Forecasty.AI

Forecasty.AI offers AI-based forecasting-as-a-service – driven by a cloud-based platform and best-of-breed Machine Learning and Deep

Learning models. Our main product is "Commodity Desk" which helps procurement managers, sellers and traders to predict commodity prices. We have also successfully tackled other domains such as demand and sales forecasting.

To capture forecasting in times of crises such as natural catastrophes or wars, our engine includes a Natural Language Processing-based real-time engine for sentiment classification. We have also worked on information obtained by using satellite image classification – e.g. to monitor crops and mines.

aivious GmbH

aivious is a German software company based in Munich. We focus on customized documentation processes, AR-guided image creation and damage detection on vehicles based on latest AI methods. With our product it is possible to optimize time-consuming and cost-intensive assessment and documentation procedures in a tamper-proof manner. Analog processes are digitized, making manual inspections during vehicle handovers a thing of the past. This ensures a seamless documentation chain. In addition, the standardized image creation minimizes the risk of errors drastically. For example, a vehicle inspection takes no more than a minute and can be performed by anyone without training via app on a standard cell phone. The AI technology we have developed can of cause be used for all image-based documentation processes, not only for vehicles.
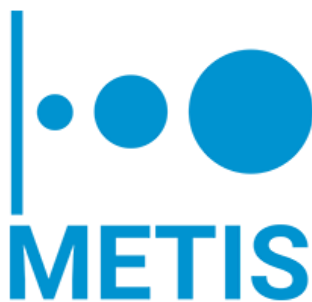
Metis Neurotec

METIS is a spin-off venture from the Karlsruhe Institute of Technology (KIT). We want to make it possible for everyone to make the best use of their mental capabilities throughout life.

METIS develops a digital platform for people with a high risk of developing dementia. By addressing the individual risk factors of a patient, we aim for positive lifestyle interventions to improve their brain health. The METIS platform provides a digital interface to help physicians to identify patients' risk factors and plan interventions. Our app provides the patient with automated tracking through wearable technology. Additionally to AI assistants, the patients are also connected to expert coaches who can help them precisely.

AI for Biodiversity

Outline

The unprecedented decline of biodiversity threatens the environmental and societal balance worldwide. Therefore, knowledge about biodiversity and its evolution is a major scientific and societal challenge. AI can make significant contributions with new dedicated solutions involving complex systems integrating heterogeneous elements and information. It can also help predict management actions and the effectiveness of public policies.

In this session, experts from the three countries will present initiatives using AI and, given the urgency of the situation, explore the potential of international cooperation to accelerate the development and deployment of effective solutions to stop the decline of biodiversity and even to restore it.

Speakers

Dr. Samuel Chaffron (Chair)
Researcher at CNRS and Nantes University

Prof. Yasuhiro Kubota
Professor, Biology Program, Faculty of Science, University of the Ryukyus

Dr. Keisuke Atsumi
Data Scientist, Biome inc.

Prof. Dr. Tim W. Nattkemper
Professor, Bielefeld University, Germany

Dr. Christian Boehm
Government official, Federal Ministry of Education and Research Germany (BMBF)

Prof. Dr. Alexandra Mendoza-Caminade
Full Professor of Law, Toulouse Capitole University

Diogo Costa Cunha
PhD Candidate, Toulouse Capitole University

Trustworthy AI

Outline

AI technologies, particularly machine learning, are used in the scientific, social, and economic spheres. They are deployed in a rapidly expanding range of applications around the world, in some cases having a direct impact on human autonomy. However, these technologies face the difficulty of producing a simple explanation of decisions, of potential biases in those decisions, and other limitations as well. In order to enable the evaluation and certification of algorithms so that they are no longer "black boxes," the variety of reliability, safety, and security issues of deep learning and other machine learning techniques must be addressed before their widespread application emerges. In this session, experts from France, Japan, and Germany will share their visions of trustworthy AI and discuss how to strengthen collaboration between the three countries.

Speakers

Marion Gardais (Chair)
VP Head of Data & AI Center of Excellence at Capgemini South Central Europe

Dr. Hiromi Arai
Unit Leader, AI Safety and Reliability Unit, RIKEN Center for Advanced Intelligence Project

Dr. Yutaka Oiwa
Deputy Director, Digital Architecture Research Center, National Institute of Advanced Industrial Science and Technology (AIST)

Prof. Dr. Stefan Wrobel
Professor of Computer Science at University of Bonn & Director of the Fraunhofer Institute for Intelligent Analysis and Information Systems IAIS

Dr. François Terrier
VP of AI program at French Alternative Energies and Atomic Energy Commission (CEA)

Education for an "AI Ready Society"

Outline

AI is penetrating and revolutionizing countless aspects of our lives, right down to selecting which articles we read online. But are people of all ages prepared to deal with AI in everyday life? The question of how to educate society as a whole is key to not leaving anyone behind. At the same time, Japan, Germany, and France are all facing a shortage of AI specialists and are competing with countries around the world for the best and brightest.

In this session, experts from the three countries will discuss strategies to prepare society for the major role that AI will play in the future and ask how Germany, Japan, and France can learn from each other and collaborate.

Speakers

Prof. Dr. Florian Röhrbein (Chair)
Professor for Neurorobotics, Chemnitz University of Technology

Dr. Yuichiro Anzai
CEO, The Tokyo Foundation for Policy Research; Senior Advisor, Japan Society for the Promotion of Science; Former President, Keio University

Dr. Osamu Sakura
Team Leader, Science, Technology and Society Team, RIKEN Center for Advanced Intelligence Project

Dr. Andreas Liebl
Managing Director, appliedAI Initiative

Prof. Justine Cassell
Director of Research, Inria Paris, France; Professor, Carnegie Mellon University, USA

Prof. Dr. Anne Boyer
Professor in Computer science, University of Lorraine – Laboratory Loria, France Scientific and educational senior adviser to the Directorate-General for Higher Education, Ministry of Higher education, France

AI & Cybersecurity

Outline

AI, or at least machine learning, and cybersecurity interact with each other. On the one hand, machine learning can be used to implement some security services (most often, reactive security services: malware classification, intrusion detection, and alert correlation). On the other hand, the increasing use of machine learning is attracting the interest of attackers who are developing new forms of attacks specifically targeting these systems: poisoning, evasion, and oracle attacks. Fighting these new forms of attacks is sometimes possible using traditional security. However, some very specific attacks that exploit the functioning of machine learning algorithms require very specific responses. This new field of study requires cooperation between security experts and AI experts. The security of the mechanisms used to provide security services is of particular concern. In this session, experts from France, Germany, and Japan will exchange views on existing initiatives involving security experts and AI experts, and their vision on the benefits of international cooperation to win the race against hackers.

Speakers

Prof. Dr. Jean-Yves Marion (Chair)
Professor, Lorraine University; Head of Loria (CNRS, Inria)

Dr. Tsutomu Matsumoto
Director, Cyber Physical Security Research Center, National Institute of Advanced Industrial Science and Technology (AIST)

Dr. Takeshi Takahashi
Associate Director, Cybersecurity research laboratory, National Institute of Information and Communications Technology (NICT)

Dr. Hermann Gumpp
CEO, Enobyte GmbH

Steffen Pfrang
Scientific Researcher, Fraunhofer IOSB, Karlsruhe, Germany

Prof. Yann Busnel
Professor, Head of Department, IMT Atlantique

Regulation & Democracy of AI

Outline

AI technology plays an important role in Evidence-Based Policy Making (EBPM), which has recently gained attention as an attempt to understand facts and issues, and to predict and improve the policies' effectiveness by analysing various statistical and administrative data. Sharing appropriate and truth-guaranteed information is also essential for fostering social consensus, which is the foundation of democracy. However, many difficult issues still need to be addressed, such as respecting the dignity and privacy of individuals in the face of data sharing and use, relativizing the relevance and veracity of information in a diverse society, and fake news in the context of free speech. In this session, experts from the three countries will discuss the new ways of democracy, and the role and regulation of AI technology in it.

Speakers

Dr. Arisa Ema (Chair)
Associate Professor, Institute for Future Initiatives, The University of Tokyo

Dr. Shoko Suzuki
Program-Specific Professor (Artificial Intelligence Research Unit), Center for the Promotion of Interdisciplinary Education and Research, Kyoto University, Japan

Prof. Dr. Bernd Holznagel
Professor, Director, Institut für Informations-, Telekommunikations- und Medienrecht (ITM), WWU Münster, Juristische Fakultät

Dr. Ina Holznagel
Head of victim protection unit, Ministry of Justice, State of North-Rhine-Westphalia, Germany

Katya Lainé
Co-Founder & CEO TALKR.ai; Numeum Board Member & Président AI Commission, AI expert GPAI

Dr. Benoit Rottembourg
Regalia Lead, Inria

AI for Health

Outline

AI technology has become indispensable in the medical field, as it is used for a variety of applications including highly accurate diagnosis, effective treatment, genome-based personalized medicine, and highly effective drug development. In a rapidly aging society, the use of AI technology is essential to solve the conflicting issues of improving the quality of nursing care and increasing costs, as well as reducing the burden on nursing care sites while improving the quality of life of nursing care recipients. On the other hand, there are many issues to be considered, such as measures for collecting and utilizing sensitive data in a safe and efficient manner, and consideration for human rights and ethics.

In this session, experts from the three countries will discuss how AI technology should be and can be used in order to "ensure healthy lives and promote well-being for all at all ages," which is also put forth in the Sustainable Development Goals (SDGs) set by the United Nations.

Speakers

Dr. Yusuke Nakamura (Chair)
President, National Institutes of Biomedical Innovation, Health and Nutrition

Dr. Mihoko Otake
Team Leader, Cognitive Behavioral Assistive Technology Team, RIKEN Center for Advanced Intelligence Project

Prof. Dr. med. Felix Nensa
Professor and Chair "Radiology with focus on AI", Institute for Artificial Intelligence in Medicine, University Hospital Essen, Essen, Germany

Dr. Simon Stock
Co-Founder of Metis Neurotec; Researcher at ITIV, Karlsruhe Institute of Technology (KIT)

Emmanuel Bacry
Chief Scientific Officer, Health Data Hub; Senior Researcher, CNRS

Dr. Louis Létinier
MD & PhD, Medical Director & Co-founder, Synapse Medicine

Wrap-up & Closing Remarks

Speakers

Prof. Didier Marty-Dessus

Counselor for Science and Technology, Embassy of France in Tokyo

Sabine Schenk

Chair Advisory Board, DWIH Tokyo; Head, Heidelberg University Office, Kyoto (HUOK)

Dr. Yuichiro Anzai

CEO, The Tokyo Foundation for Policy Research; Senior Advisor, Japan Society for the Promotion of Science; Former President, Keio University
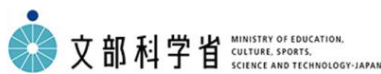
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