

The 2nd International Symposium Institute for AI and Beyond

February 12 (Sat.), 2022

1:00pm-4:00pm (JST) / 11:00pm-2:00am (11 Feb) (EST) / 8:00pm-11:00pm (11 Feb) (PST)

Online

Ten years since the breakthrough in Deep Learning. Now looking to the Future

Event Overview

This year marks the 10th anniversary of the breakthrough that deep learning has brought to AI. Deep learning, which has also tied into quantum science and brain science, has indicated a potential to transform the nature of society as well as science and technology, while at the same time, it has made various challenges more prominent.

On this milestone year, we will discuss and communicate to the international society, the present and future of deep learning, which has had a great impact on society, and the relationship between deep learning and society, culture, and science.

Registration

Please register via the following link. https://beyondai.jp/events/symposium2022

events/symposium2022

Organized by Institute for AI and Beyond, The University of Tokyo











The 2nd International Symposium Institute for AI and Beyond

Ten years since the breakthrough in Deep Learning. Now looking to the Future

Program

| MC | Sho Tsuji Assistant Professor, International Research Center for Neurointelligence (IRCN), Institutes for Advanced Study, The University of Tokyo | |
|------------------|--|--|
| Opening Remarks | Eiji Saito Professor, Graduate School of Engineering, The University of Tokyo | |
| Special Dialogue | Teruo FujiiPresident, The University of TokyoJunichi MiyakawaPresident & CEO, SoftBank Corp.ModeratorMasami HagiyaDirector, Institute for AI and Beyond, The University of Tokyo | |

1st Session: Deep Learning and Human and Society

| | Present and Future of AI |
|------------------|---|
| Panel Discussion | Panelist François Chollet Software Engineer, Google |
| | Yutaka Matsuo Professor, Graduate School of Engineering, The University of Tokyo |
| | Yukie Nagai Project Professor, International Research Center for Neurointelligence, Institutes for Advanced Study, The University of Tokyo |
| | Mediator Osamu Sakura Professor, Interfaculty Initiative in Information Studies, The University of Tokyo |

Break

2nd Session: Deep Learning and Advanced Science: AI x Quantum and Space

How AI will Change Science

| | Keynote Address | Shirley Ho Group Leader (Cosmology X Data Science), Center for Computational Astrophysics, Flatiron Institute |
|--|----------------------------------|---|
| Keynote Address × Panel Discussion | Panel Discussion | |
| | Intro Video for Panel Discussion | Eiji Saito Professor, Graduate School of Engineering, The University of Tokyo |
| | Panelist | Shirley Ho Group Leader (Cosmology X Data Science), Center for Computational Astrophysics, Flatiron Institute |
| | | Koji Hashimoto Professor, Graduate School of Science, Kyoto University |
| | | Takahiro Sagawa Professor, Graduate School of Engineering, The University of Tokyo |
| | | Eiji Saito Professor, Graduate School of Engineering, The University of Tokyo |
| | Moderator | Hitoshi Murayama Professor, Kavli Institute for the Physics and Mathematics of the Universe (Kavli IPMU), Institutes for Advanced Study, The University of Tokyo University of California, Berkeley |
| Closing Remarks | | Masami Hagiya Director, Institute for AI and Beyond, The University of Tokyo |

Language: English (Japanese / English simultaneous interpretation available)



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Special Dialogue





Graduate from Faculty of Engineering in 1988. Ph.D. in Engineering from School of Engineering, the University of Tokyo in 1993. Teruo Fujii held research positions at Institute of Industrial Science (IIS) and RIKEN Institute and became a professor of IIS in 2007, and IIS Director General in 2015. He has been the University of Tokyo's Executive Director and Vice President since 2018, Executive Vice President and Director of Institute for AI and Beyond AI since 2019, and became the 31st President of the University of Tokyo in 2021.

Junichi Miyakawa President & CEO, SoftBank Corp.

Junichi Miyakawa is President & CEO at SoftBank Corp. (since 2021), and also serves as President and CEO of MONET Technologies Inc. (since 2019) and HAPSMobile Inc. (since 2017). Miyakawa's past positions include Technical Chief Operating Officer at US-based Sprint Corporation (2014), Director, Executive Vice President & CTO of SoftBank Mobile Corp. (now SoftBank Corp.) (2007), Director of SoftBank BB Corp. (now SoftBank Corp.) (2003) and Representative Director & President of Nagoya Metallic Communications Corp. (now SoftBank Corp.) (2000). Prior to these positions, in 1991 he became Representative Director & President of KK Momotaro Internet.



Moderator

Masami Hagiya Director, Institute for AI and Beyond, The University of Tokyo

After receiving M.Sc. from the University of Tokyo, Masami Hagiya worked for Research Institute for Mathematical Sciences, Kyoto University, and received a Doctor of Science in 1988. Since 2001, he has been a professor at Department of Computer Science, Graduate School of Information Science and Technology, the University of Tokyo. He has been working in the fields of software science and engineering, including theory of programming languages, software testing and formal verification. He is also working in the fields of natural computing (computing by natural phenomena), including DNA computing. He was appointed as the Director of Institute for AI and Beyond in April 2021.

1st Session Deep Learning and Human and Society Present and Future of AI

Panel Discussion



Panelist

François Chollet Software Engineer, Google

François Chollet is a software engineer and AI researcher best known as the creator of Keras, a leading open-source framework for deep learning. He is the author of "Deep Learning with Python", a bestselling deep learning textbook. His research focuses on abstraction, reasoning, and generality in artificial intelligence.



Panelist

Yutaka Matsuo Professor, Graduate School of Engineering, The University of Tokyo

Ph.D. in Engineering from the Graduate School of Engineering, the University of Tokyo in 2002. Yutaka Matsuo is a professor at the Graduate School of Engineering, the University of Tokyo. He specializes in the field of artificial intelligence, web mining, big data analysis, and deep learning. He is conducting research on AI, the web, and business. He has been the President of the Japan Deep Learning Association since 2017, and an External Board Director, SoftBank Group Corp. since 2019.



Panelist

Mediator

Yukie Nagai Project Professor, International Research Center for Neurointelligence, Institutes for Advanced Study, The University of Tokyo

Ph.D. in Engineering from Osaka University in 2004. Yukie Nagai appointed as a Project Professor, International Research Center for Neurointelligence (IRCN), the University of Tokyo and has been engaged in the Basic Research "AI and Society" of the Institute for AI and Beyond as a project leader. She has been investigating underlying neural mechanisms for social cognitive development by means of computational approaches. The simulator reproducing atypical perception in autism spectrum disorder (ASD) greatly impacts the society as it enables people with and without ASD to better understand potential causes for social difficulties.



Osamu Sakura Professor, Interfaculty Initiative in Information Studies, The University of Tokyo

Ph.D. in Zoology from the Graduate School of Science, Kyoto University. After working at the Mitsubishi Kasei Institute of Life Sciences, Yokohama National University, and the Institute of Computer Science and Social Studies at Albert-Ludwigs-Universität Freiburg in Germany. Osamu Sakura is currently a professor at the Interfaculty Initiative in Information Studies, the University of Tokyo. He used to specialize in the field of evolutionary ecology, but he has been recently focusing on research about the relationship between science, technology, and society. He is participating as a researcher in the Kaori Hayashi's research group, one of the Basic Research projects "Al and Society" in the Institute for Al and Beyond.



Ten years since the breakthrough in Deep Learning. Now looking to the Future

2nd Session Deep Learning and Advanced Science: Al x Quantum and Space How AI will Change Science

Keynote Address× Panel Discussion

Keynote Address / Panel Discussion



Keynote Speaker / Panelist

Shirley Ho Group Leader (Cosmology X Data Science), Center for Computational Astrophysics, Flatiron Institute

Shirley Ho is an American cosmologist and astrophysicist, currently at the Center for Computational Astrophysics at Flatiron Institute in NYC and at the New York University and the Carnegie Mellon University. Ho also has visiting appointment at Princeton University. A cited expert in cosmology, machine learning applications in astrophysics and data science, her interest includes using deep learning accelerated simulations to understand the Universe, and other astrophysical phenomena.

Panel Discussion



Intro Video for Panel Discussion / Panelist

Eiji Saito Professor, Graduate School of Engineering, The University of Tokyo

Ph.D. in Applied Physics from the Graduate School of Engineering, the University of Tokyo in 2001. Eiji Saitoh specializes in the field of quantum condensed matter physics. He is a global leader in the field of electron spin science and spintronics. Since 2018, he has been a professor at the Graduate School of Engineering, the University of Tokyo and engaged in the Basic Research "Integrating Physics and AI" of the Institute for AI and Beyond as a project research leader since 2020. His research interests include "Integrating Physics and AI" and "Analysis of materials' quantum properties using AI".



Panelist

Koji Hashimoto Professor, Graduate School of Science, Kyoto University

Hashimoto specializes in theoretical physics, superstring theory, and particle theory. Ph. D. in 2000, Faculty of Science, Kyoto University. He has been in the current position since 2021, after working at the University of Tokyo, RIKEN, and Osaka University. Using the superstring theory and the mathematics of field theory, he conducts research on various physics phenomena and mathematical structures with a focus on particle theory. He has published many books, including "Deep Learning and Physics" (Springer 2021, co-authored with Akinori Tanaka, Akio Tomiya).



Panelist

Takahiro Sagawa Professor, Graduate School of Engineering, The University of Tokyo

Theoretical physicist. Ph.D. in Physics from the Graduate School of Science, the University of Tokyo in 2011. Takahiro Sagawa has been a professor of the Department of Applied Physics, School of Engineering, the University of Tokyo since October 2020. His research interests include statistical physics and quantum information. He is participating as a researcher in the Eiji Saitoh's research group, one of the Basic Research projects "Integrating Physics and AI". Ryogo Kubo Memorial Prize 2021.



Moderator

Hitoshi Murayama Professor, Kavli Institute for the Physics and Mathematics of the Universe (Kavli IPMU), Institutes for Advanced Study, The University of Tokyo / University of California, Berkeley

Theoretical physicist. Ph.D. in Physics from Department of Physics, Graduate School of Science, the University of Tokyo. University Professor of the University of Tokyo, Professor of the Kavli Institute for the Physics and Mathematics of the Universe, UTokyo Institutes for Advanced Study, the University of Tokyo, and Professor of the University of California, Berkeley. Fellow of American Physical Society in 2003, Member of American Academy of Arts and Sciences in 2013. Hitoshi Murayama specializes in the field of particle physics and cosmology, and he is one of the leading physicists in Japan. Since 2021, he has been engaged in the Basic Research "Advancement of Fundamental Al" of the Institute for Al and Beyond as a project research leader.

MC



Sho Tsuji Assistant Professor, International Research Center for Neurointelligence (IRCN), Institutes for Advanced Study, The University of Tokyo

Ph.D. in Psycholinguistics in 2014. Sho Tsuji is currently an Assistant Professor, International Research Center for Neurointelligence (IRCN), Institutes for Advanced Study, the University of Tokyo. Since 2020, She has been engaged in the Basic Research "Integrating Brain Science and AI" of the Institute for AI and Beyond as a project research leader and focuses on the mechanisms behind why infants are so fast and efficient language learners by investigating the role of social interaction. Her goal is application of research insights to AI.