TGSW 2024

TSUKUBA GLOBAL SCIENCE WEEK 2024

2 - 1 Tsukuba Digital-Bio International Center
～The Future of Healthcare through Digital, AI, and Data Science～

Date & Time: Wednesday, October 2, 2024, 14:00-17:00
Room: International Conference Room, University Hall, University of Tsukuba

Outline of the session

The Tsukuba Digital-Bio International Center aims to achieve a society that supports the wellbeing of all generations of people through bioresources accumulated in Tsukuba, life science research (consisting of medicine, food, and the environment), and interdisciplinary research using digital and AI technologies, all in collaboration with the Cybermedicine Research Center established at the University of Tsukuba in 2024, where medicine, informatics, and engineering will work together.
In this session, we will focus on data science and introduce medical research utilizing digital and AI technologies in Japan and abroad.
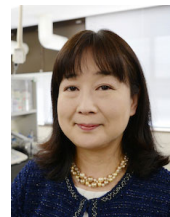
Speakers

Nishiyama Hiroyuki
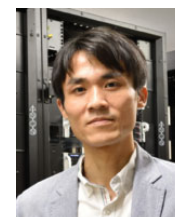University of Tsukuba
(JAPAN)
Medicine

Tetsuya Sakurai
University of Tsukuba
(JAPAN)
AI Research, Computer Science

Toshinori Moriga
University of Tsukuba
(JAPAN)
Medicine

Hiroko Isoda
University of Tsukuba
(JAPAN)
Life Sciences, Cell Biology, Food Sciences

Yasunori Futamura
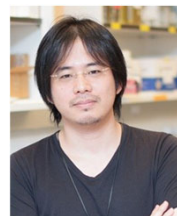University of Tsukuba
(JAPAN)
AI Research, Computer Science

Mai Takagi
National Institute for Environmental Studies
(JAPAN)
Chemistry, Medicine, Agriculture

Satomi Yoshida
University of Tsukuba
(JAPAN)
Medicine

Hidenori Takahashi
University of Tsukuba
(JAPAN)
Medicine

Takafumi Miyamoto
University of Tsukuba
(JAPAN)
Medicine

Li-Chen Fu
National Taiwan University
(Taiwan)
Electrical Engineering

Christoffer Nellåker
University of Oxford
(UK)
Computational Biology

Bartek Papiez
University of Oxford
(UK)
Medical Imaging and Machine Learning

Time	Title/Contents	Speaker
14:00~14:05	**Opening Remarks**	Dr. Toshinori MORIGA (Univ. of Tsukuba)
14:05~14:30	**Data Science of the Tsukuba Digital-Bio International Center** ・Introduction of the Tsukuba Digital-Bio International Center ・Spectral methods for dimensionality reduction, clustering, and network embedding in biomedical data analysis	Chairman：Dr. Mai TAKAGI (NIES：National Institute for Environmental Studies) Dr. Mai TAKAGI (NIES) Dr. Yasunori FUTAMURA (Univ. of Tsukuba)
14:30~15:00	**Cooperation with the Cybermedicine Research Center** ・Introduction of the Cybermedicine Research Center ・Ophthalmic AI Research and Cybermedicine Research Center's Future Aims ・Epidemiological studies using routinely collected health and medical databases	Chairman：Dr. Hiroyuki NISHIYAMA (Univ. of Tsukuba) Dr. Hiroyuki NISHIYAMA (Univ. of Tsukuba) Dr. Hidenori TAKAHASHI (Univ. of Tsukuba) Dr. Satomi YOSHIDA (Univ. of Tsukuba)
15:00~15:10	**Break Time**	
15:10~15:30	**International Joint Research: National Taiwan University** ・Deep Social Robots for Elderly Care	Chairman：Dr. Tetsuya SAKURAI (Univ. of Tsukuba) Dr. Li-Chen Fu (National Taiwan Univ.)
15:30~16:30	**International Joint Research: Oxford University** ・Label-free imaging of cellular organization in living mammalian cells via external apodization phase-contrast microscopy ・Mapping cell-to-tissue graphs across human placenta histology whole slide images using deep learning with HAPPY ・Privacy-Preserving Machine Learning through Data Collaboration Technology ・AI/ML and biomedical imaging for longitudinal disease monitoring	Chairman：Dr. Hiroko ISODA (Univ. of Tsukuba) Dr. Takafumi MIYAMOTO (Univ. of Tsukuba) Dr. Christoffer Nellåker (Univ. of Oxford) Dr. Tetsuya SAKURAI (Univ. of Tsukuba) Dr. Bartek Papiez (Univ. of Oxford)
16:30~16:50	**Panel Discussions With All Presenters**	
16:50~16:55	**Closing Remarks**	Dr. Hiroko ISODA (Univ. of Tsukuba)

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