



**The 11th Asian
Conference on
Machine Learning**

Nagoya, Japan 2019.11.17-19

Contents

About ACML2019	5
Sponsors	6
Conference Information	7
Venues	8
Floor Map of WINC Aichi	11
Timetable	13
Day 1 (Nov.17, Sunday) - Tutorials & Workshops	13
Day 2 (Nov.18, Monday) - Main Conference	14
Day 3 (Nov.19, Tuesday) - Main Conference	15
Tutorials (Nov.17)	16
Tutorial 1: Yoshimasa Tsuruoka, Yoshitaka Ushiku “Deep Learning for Natural Language Processing and Computer Vision”	16
Tutorial 2: Ivor W Tsang, Bo Han “Towards Noisy Supervision: Problems, Theories, and Algorithms”	17
Tutorial 3: Ryo Yoshida, Koji Tsuda “Machine Learning for Manufacturing” . . .	19
Tutorial 4: Yun-Nung (Vivian) Chen “Deep Learning for Conversational AI” . . .	21
Tutorial 5: Aleksandr Drozd, Anna Rogers “Text Representation Learning and Compositional Semantics”	21
Workshops (Nov.17)	23
Workshop 1: ACML2019 workshop on Machine Learning for Trajectory, Activity, and Behavior (ACML-TAB2019)	23
Workshop 2: ACML2019 RIKEN AIP workshop	24
Workshop 3: ACML’19 Weakly-supervised Learning Workshop	25
Workshop 4: ACML 2019 Workshop on Statistics & Machine Learning Re- searchers in Japan	26
Invited Talks (Nov.18 & 19)	28
Le Song “Graph Neural Networks for Representation Learning and Symbolic Reasoning”	28
James T. Kwok “Compressing deep networks”	30

Prateek Jain “Resource Efficient ML in 2KB of RAM”	31
Tatsuya Harada “Visual Recognition from Limited Supervised Data”	32
Sessions (Nov.18 & 19)	33
Session 1: Deep Learning	33
Session 2: Multi-task Learning, NLP, Computer Vision, Applications	35
Best Papers in Special Session	38
Session 3: Supervised and General Machine Learning	38
Session 4: Unsupervised, Semi-supervised Learning, Reinforcement Learning . .	39
Session 5: Computer Vision	40
Session 6: Supervised Learning	41
Session 7: Reinforcement Learning	42
Session 8: Unsupervised and Semi-supervised Learning	42
Sponsor advertisements	44

About ACML2019

The 11th Asian Conference on Machine Learning (ACML 2019) will take place on November 17 - 19, 2019 at WINC AICHI, Nagoya, Japan.

ACML has taken place annually since 2009 in locations throughout the Asia-Pacific region. This is the 11th Conference to be held in Nagoya, Japan after previous conferences were held in Beijing, China (2018), Seoul, Korea (2017), Hamilton, New Zealand (2016), Hong Kong, China (2015), Nha Trang, Vietnam (2014), Canberra, Australia (2013), Singapore (2012), Taoyuan, Taiwan (2011), Tokyo, Japan (2010), and Nanjing, China (2009).

Committees

Honorary Co-Chairs

Takashi Washio, Osaka University, Japan
Masashi Sugiyama, RIKEN / University of Tokyo, Japan

General Co-Chairs

Geoff Holmes, University of Waikato, New Zealand
Ichiro Takeuchi, Nagoya Institute of Technology / RIKEN, Japan

Program Co-Chairs

Wee Sun Lee, National University of Singapore, Singapore
Taiji Suzuki, University of Tokyo / RIKEN, Japan

Journal Track Co-Chairs

Kee-Eung Kim, KAIST, Korea Republic
Jun Zhu, Tsinghua University, China

Workshop Co-Chairs

Taesup Moon, Sungkyunkwan University, Korea Republic
Mathieu Blondel, NTT, Japan

Tutorial Co-Chairs

Yu-Feng Li, Nanjing University, China
Emtiyaz Khan, RIKEN, Japan

Publicity Chair

Marco Cuturi, Google, France

Publication Chair

Shinichi Nakajima, Technische Universität Berlin, Germany

Local Arrangements Co-Chairs

Kota Matsui, RIKEN, Japan
Noriaki Hashimoto, Nagoya Institute of Technology, Japan
Yuta Umezu, Nagoya Institute of Technology, Japan

Web Chair

Hiroyuki Hanada, RIKEN, Japan

Sponsors

Platinum Sponsors



Gold Sponsors



Conference Information

Dates Nov.17 (Sun) – Nov.19 (Tue), 2019

Main venue WINC Aichi (ウイंकあいち), Nagoya, Japan
See the venue information (page 8) for further details.

Registration The registration desk is on the **6th floor**. Please visit the desk also for inquiries during the conference.

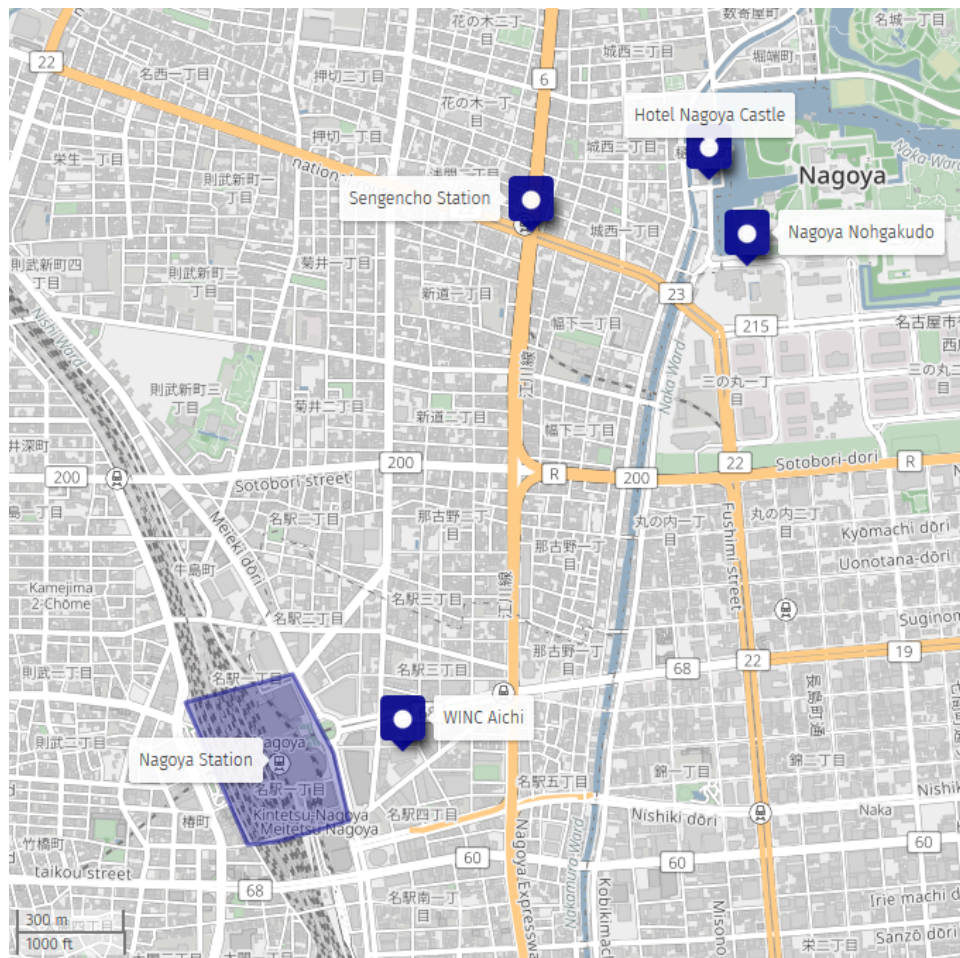
WiFi WINC Aichi provides free WiFi service. (However, the capacity is limited; use your own if possible.) Please see the leaflet for the settings.

Meals, banquet, etc. The registration fee includes the following. See the timetable (page 13) for the detailed schedule.

- Lunches (every day): 6th floor
- Coffee breaks (Nov.17 & Nov.19): 6th floor
- Welcome Reception (Nov.17, 18:00–20:00): 6th floor
- Banquet (Nov.18, 18:30–20:30): *Hotel Nagoya Castle*

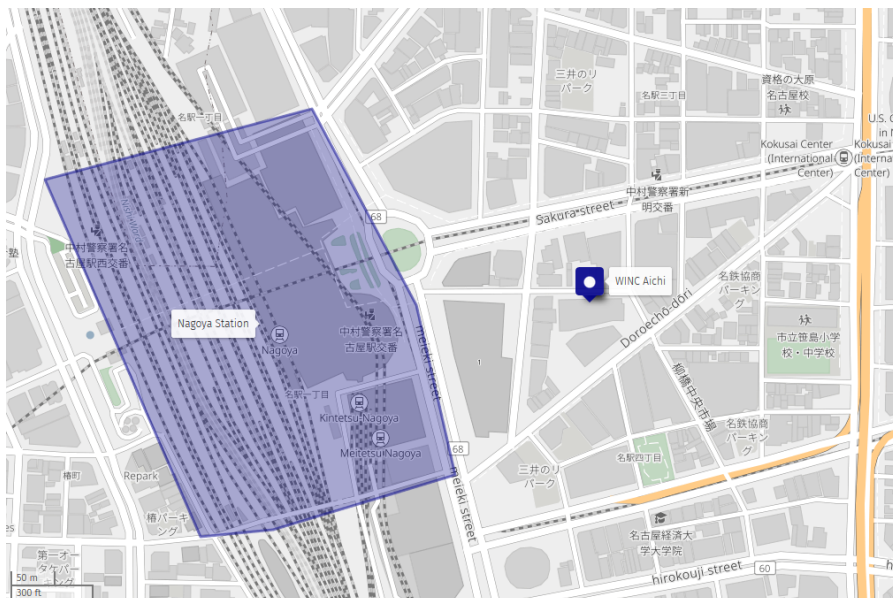
Venues

- Main venue: WINC Aichi (ウインクあいち)
- Special sessions (Nov.18; Day 2): Nagoya Nohgakudo (名古屋能楽堂)
- Banquet (Nov.18; Day 2): Hotel Nagoya Castle (ホテルナゴヤキャッスル)



WINC Aichi (Main venue)

WINC Aichi (Aichi Industry & Labor Center) is a five-minute walk from Nagoya station.



Nagoya Nohgakudo (Special sessions) & Hotel Nagoya Castle (Banquet)

In the afternoon of Day 2 (Nov.18), we will move to different venues (Figure 1). **We will have buses operating to move to and from these venues.** See the program (page 13) for the detailed schedule.

- From 15:00, special sessions will be held at *Nagoya Nohgakudo*, a theater for the Japanese traditional art “Noh”.
 - To take a bus from WINC Aichi to Nagoya Nohgakudo, please come to the location shown in Figure 2 **between 13:30 and 14:00.**
- From 18:30 to 20:30, the banquet will be held at *Hotel Nagoya Castle*.
 - It is about a 10-minute walk from Nagoya Nohgakudo to Hotel Nagoya Castle.
- To take a bus back from Hotel Nagoya Castle to WINC Aichi, please come to the entrance of the hotel **between 20:30 and 21:00.**

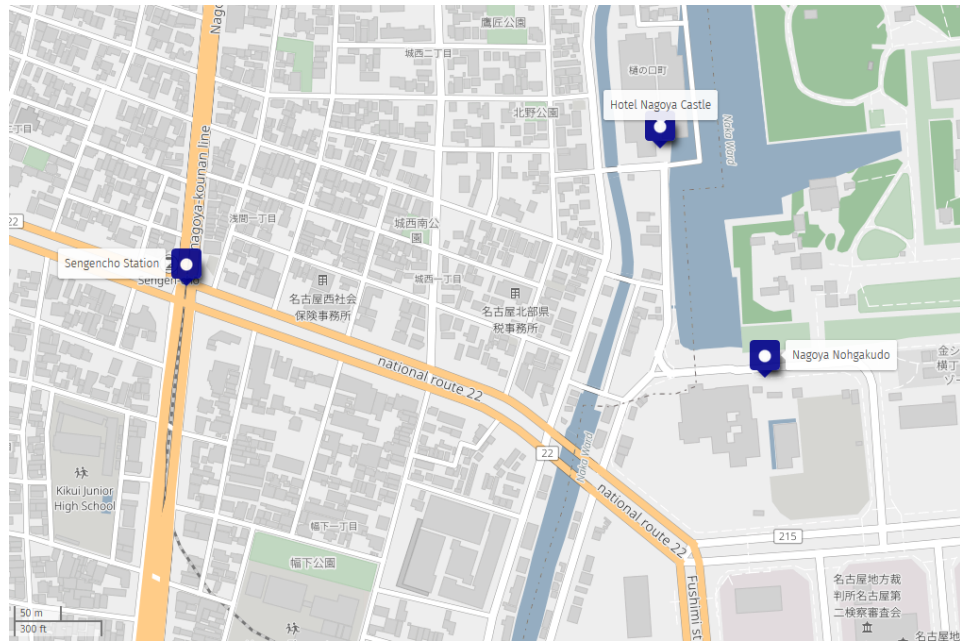


Figure 1: Map showing *Nagoya Nohgakudo*, *Hotel Nagoya Castle* and the immediate surroundings. For those who are arriving at and/or departing from these venues not by bus but by public transportation, the nearest subway station is “Sengencho” (T05) station.

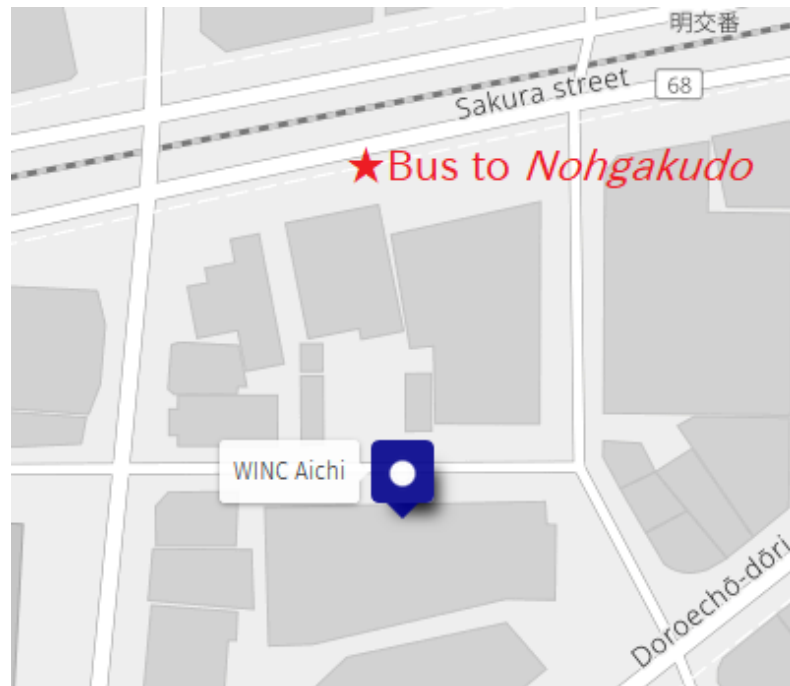
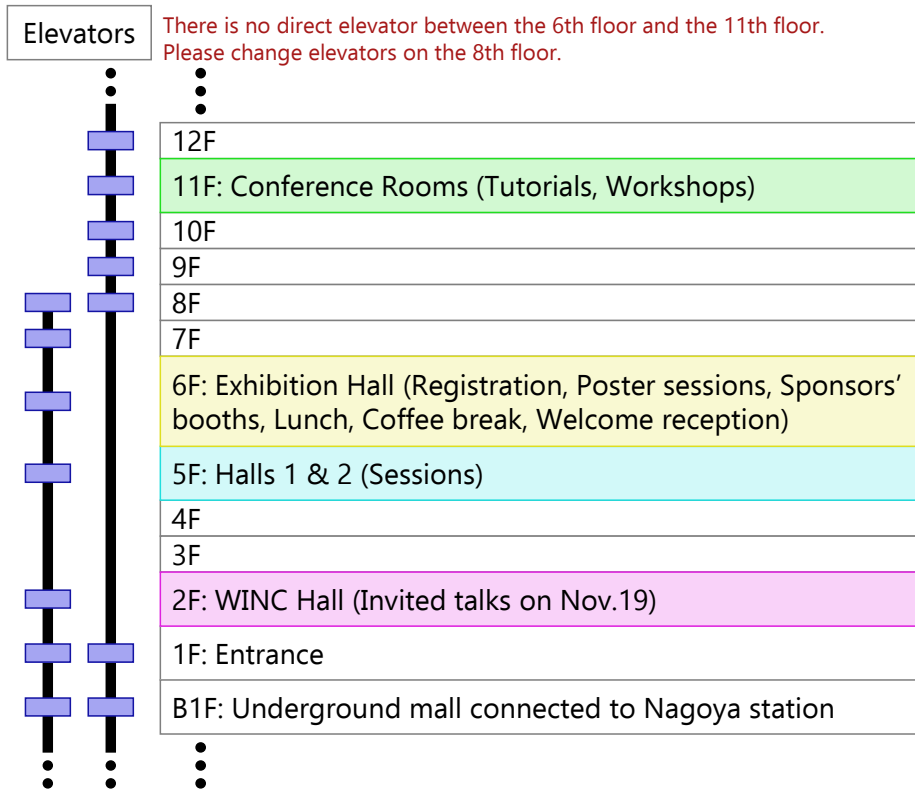


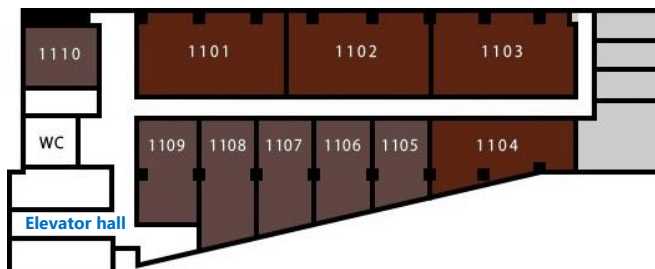
Figure 2: Map of the location of the bus stop for departing from *WINC Aichi* for *Nagoya Nohgakudo*.

Floor Map of WINC Aichi

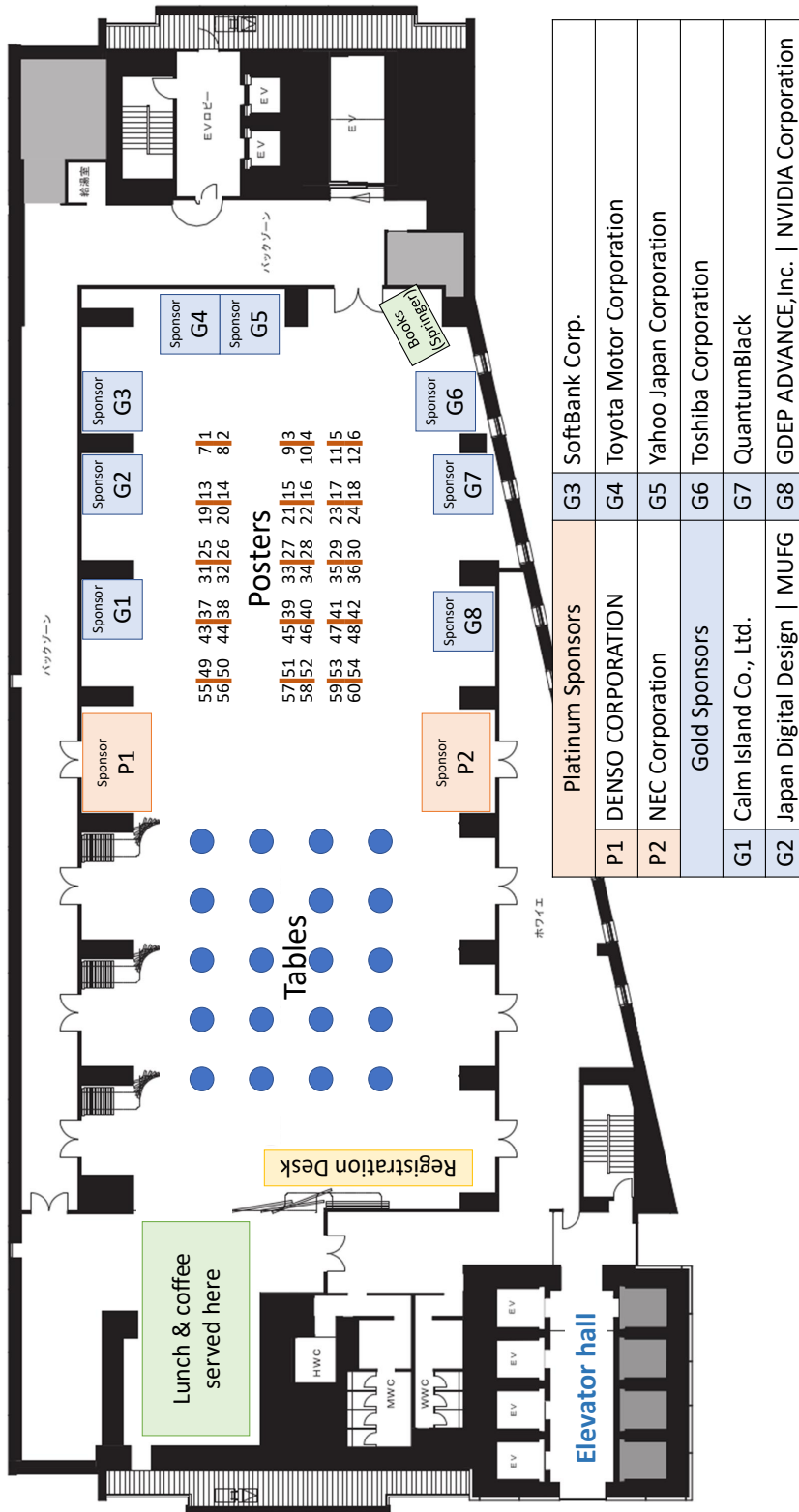
Floors



11th floor (Tutorials & Workshops on Nov.17)



6th floor



Timetable

Day 1 (Nov.17, Sunday) - Tutorials & Workshops

For workshops, their poster sessions will be held from 16:00 to 18:00 on the 6th floor (Exhibition Hall).

Time	Event	Place
08:30	Registration Desk Open	6F: Exhib. Hall
Morning Tutorial & Workshop Sessions		
10:00-12:30	Tutorial 1: Yoshimasa Tsuruoka, Yoshitaka Ushiku <i>"Deep Learning for Natural Language Processing and Computer Vision"</i>	11F: Room 1101
10:00-12:30	Tutorial 2: Ivor W Tsang, Bo Han <i>"Towards Noisy Supervision: Problems, Theories, and Algorithms"</i>	11F: Room 1102
10:00-12:30	Workshop 1: <i>"Workshop on Machine Learning for Trajectory, Activity, and Behavior"</i>	11F: Room 1103
10:00-12:30	Workshop 2: <i>"ACML2019 RIKEN AIP workshop"</i>	11F: Room 1104
12:30-13:30	Lunch	6F: Exhib. Hall
Afternoon Tutorial & Workshop Sessions		
13:30-16:00	Tutorial 3: Ryo Yoshida, Koji Tsuda <i>"Machine Learning for Manufacturing"</i>	11F: Room 1101
13:30-15:00	Tutorial 4: Yun-Nung (Vivian) Chen <i>"Deep Learning for Conversational AI"</i>	11F: Room 1102
15:00-16:30	Tutorial 5: Aleksandr Drozd, Anna Rogers <i>"Text Representation Learning and Compositional Semantics"</i>	11F: Room 1102
13:30-16:00	Workshop 3: <i>"Weakly-supervised Learning Workshop"</i>	11F: Room 1103
13:30-16:00	Workshop 4: <i>"Workshop on Statistics & Machine Learning Researchers in Japan"</i>	11F: Room 1104
16:00-18:00	Workshop Poster Session & Coffee Break	6F: Exhib. Hall
16:30-18:00	The Competition Session	11F: Room 1101
18:00-20:00	Welcome Reception	6F: Exhib. Hall

We will close the rooms at: 16:45 (11F Rooms 1102, 1103 and 1104), 18:30 (11F Room 1101), 20:30 (6F Exhibition Hall).

Day 2 (Nov.18, Monday) - Main Conference

The afternoon sessions will be held at a different venue – *Nagoya Nohgakudo*, a theater for the Japanese traditional art “Noh”.

Time	Event	Place
08:00	Registration Desk Open	6F: Exhib. Hall
Sessions		
09:00-11:00	Session 1: Deep Learning [Chair: Seungjin Choi]	5F: Hall 1
09:00-11:00	Session 2: Multi-task Learning, NLP, Computer Vision, Applications [Chair: Hsuan-Tien Lin]	5F: Hall 2
11:00-13:30	Poster Session & Lunch	6F: Exhib. Hall
13:30-15:00	Move to <i>Nagoya Nohgakudo</i> (by Bus)	
Special Sessions at Nagoya Nohgakudo		
15:00-15:50	Invited Talk: Le Song “ <i>Graph Neural Networks for Representation Learning and Symbolic Reasoning</i> ”	Nohgakudo
15:50-16:10	Best Student Paper Talk: Mahsa Asadi, Mohammad Sadegh Talebi, Hippolyte Bourel, Odalric Maillard “ <i>Model-Based Reinforcement Learning Exploiting State-Action Equivalence</i> ” [Chair: Lee Wee-Sun]	Nohgakudo
16:10-16:30	Break	Nohgakudo
16:30-17:20	Invited Talk: James T. Kwok “ <i>Compressing deep networks</i> ”	Nohgakudo
17:20-17:40	Best Paper Talk: Badr-Eddine Chérif-Abdellatif, Pierre Alquier, Mohammad Emtiyaz Khan “ <i>A Generalization Bound for Online Variational Inference</i> ” [Chair: Taiji Suzuki]	Nohgakudo
17:40-18:30	Move to Banquet Venue (10-min walk)	
18:30-20:30	Banquet	Hotel Nagoya Castle
20:30-21:00	Return to Conference Venue <i>WINC Aichi</i> (by Bus)	

We will close the rooms at: 11:30 (5F Halls 1 & 2), 14:30 (6F Exhibition Hall).

Day 3 (Nov.19, Tuesday) - Main Conference

Time	Event	Place
08:00	Registration Desk Open	6F: Exhib. Hall
Invited Talks		
09:00-09:50	Invited Talk: Prateek Jain "Resource Efficient ML in 2KB of RAM"	2F: WINC Hall
09:50-10:40	Invited Talk: Tatsuya Harada "Visual Recognition from Limited Supervised Data" [Chair: Geoffrey Holmes]	2F: WINC Hall
Sessions		
10:50-11:30	Session 3: Supervised and General Machine Learning [Chair: Min-Ling Zhang]	5F: Hall 1
10:50-11:30	Session 4: Unsupervised, Semi-supervised Learning, Reinforcement Learning [Chair: Takayuki Osogami]	5F: Hall 2
11:30-14:00	Poster Session & Lunch	6F: Exhib. Hall
Sessions		
14:10-15:25	Session 5: Computer Vision [Chair: Gang Niu]	5F: Hall 1
14:10-15:25	Session 6: Supervised Learning [Chair: Sinno Pan]	5F: Hall 2
15:25-15:55	Coffee Break	6F: Exhib. Hall
Sessions		
15:55-17:10	Session 7: Reinforcement Learning [Chair: Hirotaka Hachiya]	5F: Hall 1
15:55-17:10	Session 8: Unsupervised and Semi-supervised Learning [Chair: Yu-Feng Li]	5F: Hall 2
17:10-17:20	Closing	5F: Hall 1/2

We will close WINC Hall at 11:00.

Tutorials (Nov.17)

Tutorial slides are available at: <http://www-als.ics.nitech.ac.jp/acml2019/> (A password in the printed version of the conference booklet is required.)

Tutorial and workshop rooms have a capacity of around 100 people and it may not be possible to enter if the room is already full.

Tutorial 1: Yoshimasa Tsuruoka, Yoshitaka Ushiku “Deep Learning for Natural Language Processing and Computer Vision”

Day 1 (Nov.17), 10:00-12:30 @ Room 1101 (11th floor)

Abstract (Yoshimasa Tsuruoka)

The field of natural language processing (NLP) has witnessed major advancements in recent years thanks to deep learning technology. The accuracy of basic NLP tasks has improved drastically and the high-level tasks that were formerly possible only through complex combination of customized algorithms are now possible via end-to-end learning with relatively simple neural network architectures. This tutorial will cover the basics of deep learning-based NLP and some representative NLP applications including machine translation, summarization and question answering. It will also cover some recent research efforts for building NLP systems in resource-poor settings, such as unsupervised neural machine translation and large-scale pretraining and adaptation of deep learning models.

Biography (Yoshimasa Tsuruoka)

Yoshimasa Tsuruoka is a professor at the University of Tokyo in the Department of Information and Communication Engineering. He has been working on natural language

processing for about 20 years and developed various algorithms for low-level language processing such as tagging and parsing as well as high-level applications such as text mining and machine translation. His recent research interests include deep learning-based natural language processing, reinforcement learning and artificial intelligence for games.

Website: <https://www.logos.ic.i.u-tokyo.ac.jp/~tsuruoka/>

Abstract (Yoshitaka Ushiku)

In 2012, computer vision (CV) benefited from deep learning, resulting in dramatic improvements in image recognition performance. Various applications such as detection and segmentation as well as research of 3D vision are widely studied. CV has also been a testbed for fundamental machine learning technologies such as domain adaptation. Besides, with the development of recent machine learning techniques and the commoditization of them, integrating different modalities such as vision and language is spreading widely. In this talk, I will introduce some challenging tasks in CV and some additional topics in vision and language.

Biography (Yoshitaka Ushiku)

Yoshitaka Ushiku is a Principal Investigator at OMRON SINIC X Corporation. He received his B.E., M.A., and Ph.D. degrees from the University of Tokyo in 2009, 2011, and 2014, respectively. In 2014, he joined NTT CS Labs, Japan, where he was involved in research on image recognition. From 2016 to 2018, he was a lecturer with the University of Tokyo, Japan. His research interests lie in computer vision and natural language processing, with a particular interest in vision and language topics such as image captioning and visual question answering.

Website: <https://yoshitakaushiku.net/>

Tutorial 2: Ivor W Tsang, Bo Han “Towards Noisy Supervision: Problems, Theories, and Algorithms”

Day 1 (Nov.17), 10:00-12:30 @ Room 1102 (11th floor)

Abstract

As dataset sizes grow bigger, it is laborious and expensive to obtain clean supervision. As a result, the volume of noisy supervision becomes enormous, e.g., crowdsourcing and single-label corruption. Unfortunately, noisy supervision harms the performance of most learning algorithms, and sometimes even makes existing algorithms break down. Recently, there are a bunch of theories and approaches proposed to deal with noisy data. In this tutorial, we summarize the foundations and go through the most recent noisy supervision techniques. By participating the tutorial, the audience will gain a broad knowledge of noisy-supervised learning from the viewpoint of statistical learning theory, and detailed analysis of typical algorithms and frameworks.

Biography

Ivor W Tsang is an ARC Future Fellow and Professor of Artificial Intelligence, at University of Technology Sydney (UTS). He is also the Research Director of the UTS Flagship Research Centre for Artificial Intelligence (CAI) with more than 30 faculty members and 100 PhD students. His research focuses on transfer learning, feature selection, crowd intelligence, big data analytics for data with extremely high dimensions in features, samples and labels, and their applications to computer vision and pattern recognition. He has more than 180 research papers published in top-tier journal and conference papers. According to Google Scholar, he has more than 12,000 citations and his H-index is 53. In 2009, Prof Tsang was conferred the 2008 Natural Science Award (Class II) by Ministry of Education, China, which recognized his contributions to kernel methods. In 2013, Prof Tsang received his prestigious Australian Research Council Future Fellowship for his research regarding Machine Learning on Big Data. In addition, he had received the prestigious IEEE Transactions on Neural Networks Outstanding 2004 Paper Award in 2007, the 2014 IEEE Transactions on Multimedia Prize Paper Award, and a number of best paper awards and honors from reputable international conferences, including the Best Student Paper Award at CVPR 2010. He serves as an Associate Editor for the IEEE Transactions on Big Data, the IEEE Transactions on Emerging Topics in Computational Intelligence and Neurocomputing. He is serving as a Guest Editor for the special issue of "Structured Multi-output Learning: Modelling, Algorithm, Theory and Applications" in the IEEE Transactions on Neural Networks and Learning Systems.

Bo Han is a Postdoc Fellow at RIKEN Center for Advanced Intelligence Project (RIKEN-AIP), advised by Masashi Sugiyama. He will be a tenured-track Assistant Professor at Hong Kong Baptist University (HKBU). He received his PhD degree in Computer Science from University of Technology Sydney (2015-2019), advised by Ivor W. Tsang and Ling Chen. During 2018-2019, he was a research intern with the AI Residency Program at

RIKEN-AIP, advised by Masashi Sugiyama and Gang Niu. His current research interests lie in machine learning, deep learning and their real-world applications. His long-term goal is to develop intelligent systems, which can learn from a massive volume of complex (e.g., weakly-supervised, adversarial, and private) data (e.g, single-/multi-label, ranking, domain, graph and demonstration) automatically. He has published 15 journal articles and conference papers, including MLJ, TNNLS, TKDE articles and NeurIPS, ICML, IJCAI, ECML papers. He has served as program committes for NeurIPS, ICML, ICLR, AISTATS, UAI, AAI, ACML and ICDM. He received the UTS Research Publication Award (2017 and 2018).

Websites: <https://bhanml.github.io/>; <https://www.uts.edu.au/staff/ivor.tsang>

Tutorial 3: Ryo Yoshida, Koji Tsuda “Machine Learning for Manufacturing”

Day 1 (Nov.17), 13:30-16:00 @ Room 1101 (11th floor)

Abstract

The ability of machine learning (ML) models trained on massive amounts of data has reached or even outperformed humans in intellectually demanding tasks across various fields. As such, ML has received considerable attention in manufacturing to reap substantial time and cost savings in many potential applications in industry and science. In this tutorial, we introduce a set of ML technologies that would be a key driver to the next frontier of creative design and manufacturing. The primary objective is to identify a set of parameters, such as the structure of materials and process parameters for the devise manufacturing, such that resulting response variables meet arbitrary given requirements. In general, a ML workflow consists of two steps; the first step is to build a prediction model that describes forwardly the response variables as a function of the input parameters, and this forward model is inverted to the backward one. With the given backward model conditioned by the design target, a set of parameters that exhibits the desired response is computationally explored. In this tutorial, some outstanding successes of ML are demonstrated with examples from materials science. The topics cover novel applications of deep learning technologies for designing materials structures or synthetic routes, transfer learning for overcoming a limited supply of materials data, Bayesian optimization frameworks that integrate ML and data from computer experiments such as the first principles calculation, and so on. The first speaker, Prof. Tsuda at the University of Tokyo, shows some

outstanding progresses made by state-of-the art ML technologies for inorganic solid-state materials. The second speaker, Prof. Yoshida at the Institute of Statistical Mathematics, presents emerging new technologies for creative design and discovery of new functional molecules.

Biography

Ryo Yoshida, a Professor for Department of Data Science at the Institute of Statistical Mathematics (ISM), has served as the director of Data Science Center for Creative Design and Manufacturing in ISM since the center's opening in July 2017. After receiving his Ph.D. in Statistical Mathematics from the Graduate University for Advanced Studies in 2004, he worked as a Project Assistant Professor for the Human Genome Center at Institute of Medical Science, the University of Tokyo – a position he has maintained after joining the ISM in 2007. In addition, he serves as an invited researcher for National Institute for Materials Science (NIMS). He received the IIBMP Research Encouragement Prize (2016 and 2017). He has the experience of using his expertise in data science for research work in both biology and materials science. He plays leadership roles in several cutting-edge research projects, including the Japan Science and Technology Agency (JST)'s the "Material Research by Information Integration" initiative (2015-present). He is also conducting the development of XenonPy—a machine learning platform for materials science. He is devoted to foster and practice machine learning technologies for design and manufacturing through industry-academia collaboration.

Koji Tsuda received B.E., M.E., and Ph.D degrees from Kyoto University, Japan, in 1994, 1995, and 1998, respectively. Subsequently, he joined former Electrotechnical Laboratory (ETL), Tsukuba, Japan, as Research Scientist. When ETL was reorganized as AIST in 2001, he joined newly established Computational Biology Research Center, Tokyo, Japan. In 2000–2001, he worked at GMD FIRST (currently Fraunhofer FIRST) in Berlin, Germany, as Visiting Scientist. In 2003–2004 and 2006–2008, he worked at Max Planck Institute for Biological Cybernetics, Tübingen, Germany, first as Research Scientist and later as Project Leader. Currently, he is Professor at Department of Computational Biology and Medical Sciences, Graduate School of Frontier Sciences, the University of Tokyo. He is also affiliated with National Institute of Material Science (NIMS) and RIKEN Center for Advanced Intelligence Project.

Websites: <https://tsudalab.org/en/> ; http://daweb.ism.ac.jp/yoshidalab/index_e.html

Tutorial 4: Yun-Nung (Vivian) Chen “Deep Learning for Conversational AI”

Day 1 (Nov.17), 13:30-15:00 @ Room 1102 (11th floor)

Abstract

In the past decade, conversational systems have been the most prominent component in today's virtual personal assistants. The classic dialogue systems have rather complex and/or modular pipelines. The advance of deep learning technologies has recently risen the applications of neural models to dialogue modeling. However, how to build a conversational AI that can satisfy users' needs is still challenging. Hence, this tutorial is designed to focus on an overview of the conversational system development while describing most recent research for building dialogue systems and summarizing the challenges, in order to allow researchers to study the potential improvements of the state-of-the-art conversational AI.

Biography

Yun-Nung (Vivian) Chen is currently an assistant professor at the Department of Computer Science & Information Engineering, National Taiwan University. She earned her Ph.D. degree from Carnegie Mellon University, where her research interests focus on spoken dialogue system, language understanding, natural language processing, and multi-modal speech application. She received Google Faculty Award 2016, MOST Young Scholar Fellowship, and FAOS Young Scholar Innovation Award. Prior to joining National Taiwan University, she worked in the Deep Learning Technology Center at Microsoft Research Redmond. More about her can be found at <http://vivianchen.idv.tw>.

Website: <http://vivianchen.idv.tw/>

Tutorial 5: Aleksandr Drozd, Anna Rogers “Text Representation Learning and Compositional Semantics”

Day 1 (Nov.17), 15:00-16:30 @ Room 1102 (11th floor)

Abstract

Natural language processing is a fast-growing field, with a rapid evolution of approaches and models. In the last 6 years, we have come a long way from word embeddings to contextualized representations to pre-trained transformers, with numerous success stories for NLP system performance on question answering, text classification, machine translation and other tasks.

Despite the successes, we are still very far from reliable verbal reasoning, and one of the unresolved issues is semantic compositionality. It is not only a practical challenge, but also a theoretical one, as there is still no consensus on what a compositional representation of morphologically complex word, phrase or a sentence should be like. This tutorial provides an introduction to both state-of-the-art NLP models and aspects of linguistic theory in which they are explicitly or implicitly grounded, particularly compositionality. We will overview of the latest proposals for representing words, sentences, and texts, as well as the discussion of interpretable components in meaning representations. In addition, we will discuss some of the problems with the current evaluation methodology and frequently used benchmarks.

Biography

Aleksandr Drozd is a research scientist at RIKEN Center for Computational Science, High Performance Artificial Intelligence Systems Research Team. His interests lie at the intersection of high performance computing and artificial intelligence, particularly areas like learning and evaluating text representations. Aleksandr holds a Ph.D. degree from the Department of Mathematical and Computing Sciences at the Tokyo Institute of Technology (Japan).

Anna Rogers is a post-doctoral associate in the Computer Science Department at Text Machine lab, University of Massachusetts (Lowell). She works at the intersection of linguistics, natural language processing, and machine learning. Anna holds a Ph.D. degree from the University of Tokyo (Japan). Her current projects span intrinsic evaluation of word embeddings, compositionality, temporal and analogical reasoning.

Websites: <http://blackbird.pw/> ; <https://www.cs.uml.edu/~arogers/>

Workshops (Nov.17)

Tutorial and workshop rooms have a capacity of around 100 people and it may not be possible to enter if the room is already full.

Workshop 1: ACML2019 workshop on Machine Learning for Trajectory, Activity, and Behavior (ACML-TAB2019)

Workshop website: <http://acml-tab2019.animal-behavior-challenge.org/>

- Oral Session: Day 1 (Nov.17), 10:00-12:30 @ Room 1103 (11th floor)
- Poster Session: Day 1 (Nov.17), 16:00-18:00 @ 6th floor
- Organizers: Toru Tamaki (Hiroshima University), Keisuke Fujii (Nagoya University), Tsubasa Hirakawa (Chubu University)

Overview

Recent advances in sensing technology have made it possible to collect vast amounts of trajectories, activities and behavior data from humans, animals, and vehicles. Smart devices and visual tracking are used to capture the data of players in the sports scene and vehicles in the city for skill assessment or resource allocations. Small GPS and acceleration loggers collect behavioral data from animals in the wild, such as birds and bats, to better understand the ecology of animals. Therefore, machine learning techniques have been developed to recognize, analyze, and predict the trajectory, activity, and behavior of various targets.

This workshop provides a place for engineers, computer scientists, biologist, and neuroscientists to discuss machine learning and related methods for trajectory, activity, and behavior data collected from various sources, such as humans, animals, insects, and automobiles. The topics of interest include, but are not limited to:

- Machine learning, time series analysis, data mining, and knowledge extraction for trajectory / activity / behavior data

- Modeling, collecting, data preparation and labeling for trajectory / activity / behavior data
- Systems and applications of monitoring and recognition systems for trajectory / activity / behavior data
- Localization, recognition, prediction, and visualization for trajectory / activity / behavior data

This workshop invites submissions of one or two page abstracts in PDF format for oral or poster presentations.

- Submission deadline: 2019/Sep/30
- Workshop date: 2019/Nov/17 (Sun)

There will be no published proceedings, and the submissions will be posted on the workshop website. All submissions, if relevant to the topics, are welcome to present in a poster session. (there is no reviewing, but organizers will select in case of many submissions or out-of-scope.)

Workshop 2: ACML2019 RIKEN AIP workshop

Workshop website: https://miaoxu-ml.github.io/aip_workshop.html

- Oral Session: Day 1 (Nov.17), 10:00-12:30 @ Room 1104 (11th floor)
- Poster Session: Day 1 (Nov.17), 16:00-18:00 @ 6th floor
- Organizers: Miao Xu (RIKEN), Hiromi Arai (RIKEN), Masashi Sugiyama (RIKEN / University of Tokyo)

Overview

The Center for Advanced Intelligence Project (AIP), RIKEN was founded in 2016 as a research center for the MEXT-AIP Project. We have fully started our research activities in 2017, mainly in our newly opened Nihonbashi Office.

In the Center for AIP, we set up three research groups:

- Generic Technology Research Group
- Goal-Oriented Technology Research Group

- Artificial Intelligence in Society Research Group

Together with various companies, universities, research institutes and projects, we are tackling the following five activities: development of fundamental technology, acceleration of scientific research, the solution to societal problems, analysis of ethical, legal and social issues of AI, development of AI researchers and data scientists.

This RIKEN AIP Workshop@ACML19 aims at introducing the forefront machine learning researches conducted at RIKEN AIP to ACML participants, and incurring fruitful discussions between researchers inside and outside of AIP about existing key progress and promising new directions. Topics of this workshop cover a variety of theoretical and applied researches, including deep learning, reinforcement learning, weakly-supervised learning, Bayesian optimization, AI for social good, AI for disaster prevention. Our workshop invites leading researchers from all three research groups and also hosts poster presenters with a wide range of perspectives and interests.

Workshop 3: ACML'19 Weakly-supervised Learning Workshop

Workshop website: <https://wsl-workshop.github.io/>

- Oral Session: Day 1 (Nov.17), 13:30-16:00 @ Room 1103 (11th floor)
- Poster Session: Day 1 (Nov.17), 16:00-18:00 @ 6th floor
- Organizers: Bo Han (RIKEN), Gang Niu (RIKEN), Quanming Yao (4Paradigm/Hong Kong University of Science and Technology), Giorgio Patrini (DeepTrace), Aditya Menon (Google AI), Clayton Scott (University of Michigan), Masashi Sugiyama (RIKEN/University of Tokyo)

Overview

UC terminates subscriptions with world's largest scientific publisher in push for open access to publicly funded research, since "Knowledge should not be accessible only to those who can pay," said Robert May, chair of UCs faculty Academic Senate. Similarly, machine learning should not be accessible only to those who can pay. Specifically, modern machine learning is migrating to the era of complex models (e.g., deep neural networks), which require a plethora of well-annotated data. Giant companies have enough money to collect well-annotated data. However, for startups or non-profit organizations, such data is barely

acquirable due to the cost of labeling data or the intrinsic scarcity in the given domain. These practical issues motivate us to research and pay attention to weakly-supervised learning (WSL), since WSL does not require such a huge amount of annotated data. We define WSL as the collection of machine learning problem settings and algorithms that share the same goals as supervised learning but can only access to less supervised information than supervised learning.

In this workshop, we discuss both theoretical and applied aspects of WSL, which includes but not limited to the following topics:

1. Theory and applications of incomplete supervision, e.g., semi-supervised learning, active learning and positive-unlabeled learning;
2. Theory and applications of inexact supervision, e.g., multi-instance learning and complementary learning;
3. Theory and applications of inaccurate supervision, e.g., crowdsourcing and learning with noisy labels;
4. Theory and applications of cross-domain supervision, e.g., zero-/one-/few-shot learning, domain adaptation and multi-task learning

Workshop 4: ACML 2019 Workshop on Statistics & Machine Learning Researchers in Japan

Workshop website: <https://sites.google.com/view/statsmljapan19/>

- Oral Session: Day 1 (Nov.17), 13:30-16:00 @ Room 1104 (11th floor)
- Poster Session: Day 1 (Nov.17), 16:00-18:00 @ 6th floor
- Organizers: Kota Matsui (RIKEN), Yuta Umezumi (Nagoya Institute of Technology)

Overview

In recent years, machine learning and data science have attracted explosive interest in Japan. These elemental technologies are spreading into fields that have been developed independently from ML such as medicine and material science, so interest from not only academia and tech companies but also other industries such as manufacturers becomes very high. Consequently, the number of participants in the Japanese domestic machine learning conference is substantially increasing like the top conferences.

This workshop aims to facilitate exchanges between all those interested in ML and DS in Japan and Asian experts who are active in these fields. The WS would be a great chance for sharing ideas and expertise among participants, encouraging industries or researchers in other fields to get suggestions and advices from ML experts, and also fostering connections and possible collaborations between Japanese and International ML communities. In particular, this time we will have a poster session and call for research presentations at all stages including emerging ideas, ongoing research, and research introductions that have already been published. Please make good use of this opportunity.

Invited Talks (Nov.18 & 19)

Le Song “Graph Neural Networks for Representation Learning and Symbolic Reasoning”

Day 2 (Nov.18), 15:00-15:50 @ *Nagoya Nohgakudo*
Session chair: Lee Wee-Sun

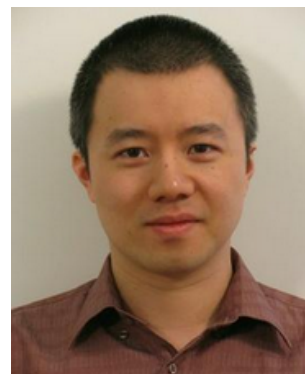
Abstract

Graphs and hypergraphs are prevalent in many real world applications arising from online social platforms, recommendation systems, knowledge bases, computational biology and materials science. How to represent such graph data to capture their similarities or differences? How to integrate graph data with other sources of data in representation learning? How to combine deep learning with symbolic reasoning? How to better design algorithms over graphs?

I will present a graph neural network framework for addressing these challenges based on the idea of embedding message passing algorithms into function spaces, and learning these algorithms from data. In large scale applications involving molecule design, recommendation system and knowledge reasoning, this graph neural network framework consistently achieves the-state-of-the-art results, in terms of accuracy, model size and scalability. Graph neural networks also appear to be a very good tool to advance AI to the next stage, which can combine deep learning with symbolic reasoning.

Biography

Le Song is an Associate Professor in the Department of Computational Science and Engineering, College of Computing, an Associate Director of the Center for Machine Learning, Georgia Institute of Technology, and also a Principal Engineer of Ant Financial, Alibaba. He received his Ph.D. from University of Sydney in 2008, and then conducted his post-doctoral research in



the Department of Machine Learning, Carnegie Mellon University, between 2008 and 2011. Before he joined Georgia Institute of Technology in 2011, he was a research scientist at Google. His principal research direction is machine learning, especially nonlinear models, such as kernel methods and deep learning, and probabilistic graphical models for large scale and complex problems, arising from artificial intelligence, network analysis, computational biology and other interdisciplinary domains. He is the recipient of the NIPS'17 Materials Science Workshop Best Paper Award, the Recsys'16 Deep Learning Workshop Best Paper Award, AISTATS'16 Best Student Paper Award, IPDPS'15 Best Paper Award, NSF CAREER Award'14, NIPS'13 Outstanding Paper Award, and ICML'10 Best Paper Award. He has also served as the area chair or senior program committee for many leading machine learning and AI conferences such as ICML, NeurIPS, AISTATS, AAAI and IJCAI, and the action editor for JMLR and IEEE TPAMI.

Website: <https://www.cc.gatech.edu/~lsong/>

James T. Kwok “Compressing deep networks”

Day 2 (Nov.18), 16:30-17:20 @ Nagoya Nohgakudo

Session chair: Taiji Suzuki

Abstract

Deep networks are powerful but computationally expensive. This hinders deployment to small computing devices such as cell phones and the internet of things. To alleviate this problem, a popular approach is to quantize the deep network weights to a small number of bits. In this talk, we consider a number of issues related to network quantization. First, we show that the effect of quantization on the loss can be directly formulated into the optimization problem. Moreover, the exploding gradient problem can become more severe in training quantized LSTMs. By using the popularly used weight/layer/batch normalization, we show theoretically and empirically that the gradient magnitude can be stabilized. Besides, communication overhead is a major bottleneck in distributed deep network training. To improve communication efficiency, besides using weight quantization, we propose a general distributed compressed SGD scheme which compresses the gradients both to and from workers. With these techniques, empirical results show that the resultant network can significantly reduce its size without sacrificing performance, and runs much faster in a distributed environment.

Biography

Prof. Kwok is a Professor in the Department of Computer Science and Engineering, Hong Kong University of Science and Technology. He received his B.Sc. degree in Electrical and Electronic Engineering from the University of Hong Kong and his Ph.D. degree in computer science from the Hong Kong University of Science and Technology. Prof. Kwok served/is serving as an Associate Editor for the IEEE Transactions on Neural Networks and Learning Systems, Neurocomputing and the International Journal of Data Science and Analytics. He has also served as Program Co-chair of a number of international conferences, and as Area Chairs in major machine learning and AI conferences. He is an IEEE Fellow.



Website: <http://www.cse.ust.hk/~jamesk/>

Prateek Jain “Resource Efficient ML in 2KB of RAM”

Day 3 (Nov.19), 09:00-09:50 @ *WINC Hall* (2nd Floor)

Session chair: Geoffrey Holmes

Abstract

Several critical applications require ML inference on resource-constrained devices, especially in the domain of Internet of Things like smartcity, smarthouse etc. Furthermore, many of these problems reduce to time-series classification. Unfortunately, existing techniques for time-series classification like recurrent neural networks are very difficult to deploy on the tiny devices due to computation and memory bottleneck. In this talk, we will discuss two new methods FastGRNN and EMI-RNN that can enable time-series inference on devices as small as Arduino Uno that have 2KB of RAM. Our methods can provide as much as 70x speed-up and compression over state-of-the-art methods like LSTM, GRU, while also providing strong theoretical guarantees.

This talk is based on joint works with Manik Varma, Harsha Simhadri, Kush Bhatia, Don Dennis, Ashish Kumar, Aditya Kusupati, Manish Singh, and Shishir Patil.

Biography

Prateek Jain is a senior principal researcher at Microsoft Research India. He is also an adjunct faculty member at the Computer Science department at IIT Kanpur. He received his PhD in Computer Science from University of Texas at Austin and his B.Tech. in Computer Science from IIT Kanpur. His research interests are in resource-constrained machine learning, high-dimensional statistics, and non-convex optimization. He has served on several senior program committees for top ML conferences and also won ICML-2007, CVPR-2008 best student paper awards.

Website: <http://www.prateekjain.org/>



Tatsuya Harada “Visual Recognition from Limited Supervised Data”

Day 3 (Nov.19), 09:50-10:40 @ *WINC Hall* (2nd Floor)
Session chair: Geoffrey Holmes

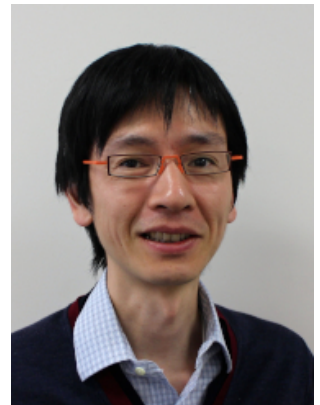
Abstract

Training deep neural networks from limited supervised data for constructing an accurate prediction model is one of the crucial tasks in visual recognition problems. In this talk, we introduce domain adaptation methods for both classification and generative models that transfer knowledge in a label rich domain to a label scarce domain. We also present a new learning method using between-class examples to train DNNs and boost a classification performance from limited data. Besides, we will briefly introduce various topics that we are working on in our team.

Biography

Tatsuya Harada is a Professor in the Research Center for Advanced Science and Technology at the University of Tokyo. His research interests center on visual recognition, machine learning, and intelligent robot. He received his Ph.D. from the University of Tokyo in 2001. He is also a team leader at RIKEN AIP and a vice director of Research Center for Medical Bigdata at National Institute of Informatics, Japan.

Website: <https://www.m.i.t.u-tokyo.ac.jp/harada/>



Sessions (Nov.18 & 19)

Conference track papers are available online at *Proceedings of Machine Learning Research*, Volume 101 (<http://proceedings.mlr.press/v101/>). **Journal track** papers will appear in a special issue of the Springer journal *Machine Learning*.

- Each **oral presentation** consists of a 12-minute talk and a 2-minute discussion.
- Each **spotlight presentation** consists of a 2.5-minute talk.
- Each **best paper presentation** consists of a 15-minute talk and a 5-minute discussion.
- Each presentation (all of the above) are to be **presented in the poster session on the same day**. The size of a poster should be at largest **A0 vertical (1189mm height × 841mm width)** (A0 *horizontal* posters cannot be put up).

Session 1: Deep Learning

Day 2 (Nov.18), talks: 09:00-11:00 (5th floor Hall 1), poster session: 11:00-13:30
Session chair: Seungjin Choi

- 09:00 **Oral** **Poster Mon01** “**Gradient Descent Optimizes Over-parameterized Deep ReLU Networks**” DifanZou (University of California, Los Angeles); Yuan Cao (UCLA); Dongruo Zhou (UCLA); Quanquan Gu (University of California, Los Angeles) (Journal Track)
- 09:15 **Oral** **Poster Mon02** “**Efficient Diversified Mini-Batch Selection using Variable High-layer Features**” Wanming Huang (UTS); Richard Yi Da Xu (University of Technology, Sydney); Ian Oppermann (The Treasury) (Conference Track)
- 09:30 **Spotlight** **Poster Mon03** “**ResNet and Batch-normalization Improve Data Separability**” Yasutaka Furusho (Nara Institute of Science and Technology); Kazushi Ikeda (Nara Institute of Science and Technology) (Conference Track)
- 09:33 **Spotlight** **Poster Mon04** “**Focused Anchors Loss: cost-sensitive learning of discriminative features for imbalanced classification**” Bahram Baloch (NUCES); Sateesh Kumar (NUCES); Sanjay Haresh (NUCES); Tahir Syed (National University of Computer and Emerging Sciences) (Conference Track)
- 09:36 **Spotlight** **Poster Mon05** “**Adaptive truncated residual regression for fine-grained regression problems**” Hirotaka Hachiya (Center for Advanced Intelli-

- gence Project, RIKEN); Yamamoto Yu (Center for Advanced Intelligence Project, RIKEN); Kazuro Hiraoka (Center for Advanced Intelligence Project, RIKEN); Naonori Ueda (NTT) (Conference Track)
- 09:39 **Spotlight** **Poster Mon06** “**G-UAP: Generic Universal Adversarial Perturbation that Fools RPN-based Detectors**” Xing Wu (SunYat-sen university); Lifeng Huang (SunYat-sen university); Chengying Gao (SunYat-sen university) (Conference Track)
 - 09:42 **Spotlight** **Poster Mon07** “**Towards Governing Agent’s Efficacy: Action-Conditional β -VAE for Deep Transparent Reinforcement Learning**” John Yang (Seoul National University); Gyujeong Lee (Seoul National University); Simyung Chang (Seoul National University); Nojun Kwak (Seoul National University) (Conference Track)
 - 09:45 **Spotlight** **Poster Mon08** “**Convolutional Neural Collaborative Filtering with Stacked Embeddings**” Liu Han (Huazhong University of Science and Technology); Hailong Wu (Huazhong University of Science and Technology); Nan Hu (Huazhong University of Science and Technology); Binbin Qu (Huazhong University of Science and Technology) (Conference Track)
 - 09:48 **Spotlight** **Poster Mon09** “**Investigating the effect of novel classes in semi-supervised learning**” Yuxuan(Alex) Peng (University of Auckland); Yun Sing Koh (The University of Auckland, New Zealand); Patricia Riddle (University of Auckland, New Zealand); Bernhard Pfahringer (University of Waikato) (Conference Track)
 - 09:51 **Spotlight** **Poster Mon10** “**From Implicit to Explicit Feedbacks: A deep neural network for modeling the sequential behaviors of online users**” Anh Phan Tuan (Hanoi University of Science and Technology); Nhat Nguyen Trong (VCCorp Corporation); Duong Bui Trong (VCCorp Corporation); Linh Ngo Van (Hanoi University of Science and Technology); Khoat Than (Hanoi University of Science and Technology) (Conference Track)
 - 09:54 **Spotlight** **Poster Mon11** “**Multivariate Time Series Prediction Based on Optimized Temporal Convolutional Networks with Stacked Auto-encoders**” Yunxiao Wang (Nanjing University of Posts and Telecommunications); Zheng Liu (Nanjing University of Posts and Telecommunications); Di Hu (Nanjing University of Posts and Telecommunications); Mian Zhang (Nanjing University of Posts and Telecommunications) (Conference Track)
 - 09:57 **Oral** **Poster Mon12** “**Regularizing Neural Networks via Stochastic Branch Layers**” Wonpyo Park (POSTECH); Paul Hongsuck Seo (POSTECH); Bohyung Han (Seoul National University); Minsu Cho (POSTECH) (Conference Track)
 - 10:12 **Oral** **Poster Mon13** “**Variational Conditional GAN for Fine-grained Controllable Image Generation**” Mingqi Hu (Southeast University); Deyu Zhou (Southeast University); Yulan He (University of Warwick) (Conference Track)
 - 10:27 **Spotlight** **Poster Mon14** “**An Anchor-Free Oriented Text Detector with Connectionist Text Proposal Network**” Chenhui Huang (East China Normal Uni-

- versity); Jinhua Xu (East China Normal University) (Conference Track)
- 10:30 **Spotlight** **Poster Mon15** “**Nuclei segmentation by using convolutional network with distance map and contour information**” Xiaoming Liu (Wuhan University of Science and Technology); Zhengsheng Guo (Wuhan University of Science and Technology); Bo Li (Wuhan University of Science and Technology); Jun Cao (Wuhan University of Science and Technology) (Conference Track)
 - 10:33 **Spotlight** **Poster Mon16** “**Multi-branch Siamese Network for High Performance Online Visual Tracking**” Junfei Zhuang (Beijing University of Posts and Telecommunications & Beijing FaceAll Co); Yuan Dong (Beijing University of Posts and Telecommunications); Hongliang Bai (Beijing Faceall Technology Co.,Ltd); wang gang (srcb) (Conference Track)
 - 10:36 **Spotlight** **Poster Mon17** “**Forward-Backward Generative Adversarial Networks for Anomaly Detection**” Youngnam Kim (Pohang University of Science and Technology); Seungjin Choi (BARO) (Conference Track)
 - 10:39 **Spotlight** **Poster Mon18** “**Unpaired Data based Cross-domain Synthesis and Segmentation Using Attention Neural Network**” Xiaoming Liu (Wuhan University of Science and Technology); Xiangkai Wei (Wuhan University of Science and Technology); Aihui Yu (Wuhan University of Science and Technology); Zhifang Pan (Wenzhou Medical University) (Conference Track)
 - 10:42 **Spotlight** **Poster Mon19** “**Surface Reconstruction based on Self-Merging Octree with Deep Learning**” Jian Lv (North University of China); Xie Han (North University of China); Jiajie Zheng (North University of China); Fengguang Xiong (North University of China); Min Pang (North University of China) (Conference Track)
 - 10:45 **Spotlight** **Poster Mon20** “**Realistic Image Generation using Region-phrase Attention**” Wanming Huang (UTS); Richard Yi Da Xu (University of Technology, Sydney); Ian Oppermann (The Treasury) (Conference Track)
 - 10:48 **Spotlight** **Poster Mon21** “**An Encoding Adversarial Network for Anomaly Detection**” Elies gherbi (irt-SystemX / Evry University); Blaize Hanczar (University of Evry); Jean-Christophe Janodet (University of Evry); Witold Kludiel (Renault) (Conference Track)

Session 2: Multi-task Learning, NLP, Computer Vision, Applications

Day 2 (Nov.18), talks: 09:00-11:00 (5th floor Hall 2), poster session: 11:00-13:30
 Session chair: Hsuan-Tien Lin

- 09:00 **Oral** **Poster Mon22** “**Communication-Efficient Distributed Multi-Task**

- Learning with Matrix Sparsity Regularization**” Qiang Zhou (NTU, Singapore); Yu Chen (Nanyang Technological University); Sinno Pan (NTU, Singapore) (Journal Track)
- 09:15 **Oral** **Poster Mon23** “**Few-Shot Learning with Adaptively Initialized Task Optimizer**” Han-Jia Ye (Nanjing University); Xiang-Rong Sheng (National Key Laboratory of Novel Software Technology, Nanjing University); De-Chuan Zhan (Nanjing University) (Journal Track)
 - 09:30 **Spotlight** **Poster Mon24** “**Learning to Sample Hard Instances for Graph Algorithms**” Ryoma Sato (Kyoto University); Makoto Yamada (RIKEN AIP / Kyoto University); Hisashi Kashima (Kyoto University/RIKEN Center for AIP) (Conference Track)
 - 09:33 **Spotlight** **Poster Mon25** “**A Model of Text-Enhanced Knowledge Graph Representation Learning with Mutual Attention**” Yashen Wang (China Academy of Electronics and Information Technology of CETC) (Conference Track)
 - 09:36 **Spotlight** **Poster Mon26** “**A New Multi-choice Reading Comprehension Dataset for Curriculum Learning**” Yichan Liang (Sun Yat-sen University, China); Jianheng Li (Sun Yat-sen University, China); Jian Yin (Sun Yat-Sen University) (Conference Track)
 - 09:39 **Spotlight** **Poster Mon27** “**An Attentive Memory Network Integrated with Aspect Dependency for Document-Level Multi-Aspect Sentiment Classification**” Qingxuan Zhang (Beijing Institute of Technology); Chongyang Shi (Beijing Institute of Technology) (Conference Track)
 - 09:42 **Spotlight** **Poster Mon28** “**Improving Statute Prediction via Mining Correlations between Statutes**” Yi Feng (Nanjing University); Chuanyi Li (Nanjing University); Jidong Ge (Nanjing University); Bin Luo (Nanjing University) (Conference Track)
 - 09:45 **Spotlight** **Poster Mon29** “**Cell-aware Stacked LSTMs for Modeling Sentences**” Jihun Choi (Seoul National University); Taeuk Kim (Seoul National University); Sang-goo Lee (Seoul National University) (Conference Track)
 - 09:48 **Spotlight** **Poster Mon30** “**Text Length Adaptation in Sentiment Classification**” Reinald Kim Amplayo (University of Edinburgh); Seonjae Lim (Yonsei University); Seungwon Hwang (Yonsei University, Korea) (Conference Track)
 - 09:51 **Spotlight** **Poster Mon31** “**Forward and Backward Knowledge Transfer for Sentiment Classification**” Hao Wang (Southwest Jiaotong University); Bing Liu (UIC); Shuai Wang (University of Illinois at Chicago, USA); Nianzu Ma (UIC); Yan Yang (Southwest Jiaotong University) (Conference Track)
 - 09:54 **Spotlight** **Poster Mon32** “**Effective Sentence Scoring Method Using BERT for Speech Recognition**” Joongbo Shin (Seoul National University); Yoonhyung Lee (Seoul National University); Kyomin Jung (Seoul National University) (Conference Track)
 - 09:57 **Oral** **Poster Mon33** “**Differentially Private Community Detection in Attributed Social Networks**” Tianxi Ji (Case Western Reserve University); Changqing

- Luo (Virginia Commonwealth University); Yifan Guo (Case Western Reserve University); Jinlong Ji (Case Western Reserve University); Weixian Liao (Towson University); Pan Li (Case Western Reserve University) (Conference Track)
- 10:12 **Oral** **Poster Mon34** **“Fusing Recalibrated Features and Depthwise Separable Convolution for the Mangrove Bird Sound Classification”** Chongqin Lei (CHONGQING UNIVERSITY); Gong Weiguo (Chongqing University); Zixu Wang (CHONGQING UNIVERSITY) (Conference Track)
 - 10:27 **Spotlight** **Poster Mon35** **“SPCDet: Enhancing Object Detection with Combined Feature Fusing”** haixin wang (Beijing Institute of Technology); lintao wu (Intel Labs China); qiongzhi wu (Beijing Institute of Technology) (Conference Track)
 - 10:30 **Spotlight** **Poster Mon36** **“An Articulated Structure-Aware Network for 3D Human Pose Estimation”** Zhenhua Tang (College of Computer Science and Software Engineering, Shenzhen University); Xiaoyan Zhang (College of Computer Science and Software Engineering, Shenzhen University); Junhui Hou (City University of Hong Kong, Hong Kong) (Conference Track)
 - 10:33 **Spotlight** **Poster Mon37** **“Multi-Scale Visual Semantics Aggregation with Self-Attention for End-to-End Image-Text Matching”** Zhuobin Zheng (Tsinghua University); Youcheng Ben (Tsinghua University); Chun Yuan (Tsinghua University) (Conference Track)
 - 10:36 **Spotlight** **Poster Mon38** **“Cascaded and Dual: Discrimination Oriented Network for Brain Tumor Classification”** Wenxuan Zhang (Nanjing University of Science and Technology); Dong Zhang (Nanjing University of Science and Technology); Xinguang Xiang (NJUST) (Conference Track)
 - 10:39 **Spotlight** **Poster Mon39** **“Software Component Prediction for Bug Reports”** Wei Zhang (Adobe); Chris Challis (adobe) (Conference Track)
 - 10:42 **Spotlight** **Poster Mon40** **“SDC-causing Error Detection Based on Lightweight Vulnerability Prediction”** Cheng Liu (Nanjing University of Aeronautics and Astronautics); Jingjing Gu (Nanjing University of Aeronautics and Astronautics); Zujia Yan (Nanjing University of Aeronautics and Astronautics); Fuzhen Zhuang (Institute of Computing Technology, Chinese Academy of Sciences); Yunyun Wang (Nanjing University of Posts and Telecommunications) (Conference Track)
 - 10:45 **Spotlight** **Poster Mon41** **“Improving Relation Classification by Entity Pair Graph”** Yi Zhao (Beijing Jiaotong University); Huaiyu Wan (Beijing Jiaotong University); Jianwei Gao (Beijing Jiaotong University); Youfang Lin (Beijing Jiaotong University) (Conference Track)
 - 10:48 **Spotlight** **Poster Mon42** **“Multi-modal Representation Learning for Successive POI Recommendation”** Lishan Li (Tsinghua University); Ying Liu (Tsinghua University); Jianping Wu (Tsinghua University); Lin He (Tsinghua University); Gang Ren (Tsinghua University) (Conference Track)

Best Papers in Special Session

Day 2 (Nov.18), poster session: 11:00-13:30, talks: 15:50-16:10 & 17:20-17:40 (Nagoya Nohgakudo)

Session chair: Lee Wee-Sun (Best student paper talk), Taiji Suzuki (Best paper talk)

- 15:50 **Best student paper** **Poster Mon43** “**Model-Based Reinforcement Learning Exploiting State-Action Equivalence**” Mahsa Asadi (Inria); Mohammad Sadegh Talebi (Inria); Hippolyte Bourel (ENS Rennes); Odalric Maillard (Inria) (Conference Track)
- 17:20 **Best paper** **Poster Mon44** “**A Generalization Bound for Online Variational Inference**” Badr-Eddine Chérief-Abdellatif (CREST); Pierre Alquier (RIKEN); Mohammad Emtiyaz Khan (RIKEN) (Conference Track)

Session 3: Supervised and General Machine Learning

Day 3 (Nov.19), talks: 10:50-11:30 (5th floor Hall 1), poster session: 11:30-14:00

Session chair: Min-Ling Zhang

- 10:50 **Spotlight** **Poster Tue01** “**Learning Weighted Top-k Support Vector Machine**” Tsuyoshi Kato (Gunma University); Yoshihiro Hirohashi (DENSO CORPORATION) (Conference Track)
- 10:53 **Spotlight** **Poster Tue02** “**Multiple Empirical Kernel Learning with Discriminant Locality Preservation**” Bolu Wang (East China University of Science and Technology); Dongdong Li (East China University of Science and Technology); Zhe Wang (East China University of Science and Technology) (Conference Track)
- 10:56 **Spotlight** **Poster Tue03** “**Optimal PAC-Bayesian Posteriors for Stochastic Classifiers and their use for Choice of SVM Regularization Parameter**” Puja Sahu (Indian Institute of Technology Bombay); Nandyala Hemachandra (Indian Institute of Technology Bombay) (Conference Track)
- 10:59 **Spotlight** **Poster Tue04** “**Zero-shot Domain Adaptation Based on Attribute Information**” Masato Ishii (The University of Tokyo/RIKEN/NEC); Takashi Takenouchi (Future University Hakodate/RIKEN Center for Advanced Intelligence Project); Masashi Sugiyama (RIKEN/The University of Tokyo) (Conference Track)
- 11:02 **Spotlight** **Poster Tue05** “**Kernel Learning for Data-Driven Spectral Analysis of Koopman Operators**” Naoya Takeishi (RIKEN) (Conference Track)
- 11:05 **Spotlight** **Poster Tue06** “**Stochastic Gradient Trees**” Henry Gouk (University of Edinburgh); Bernhard Pfahringer (University of Waikato); Eibe Frank

- (University of Waikato) (Conference Track)
- 11:08 **Spotlight** **Poster Tue07** “**Minimax Online Prediction of Varying Bernoulli Process under Variational Approximation**” Kenta Konagayoshi (Kyushu University); Kazuho Watanabe (Toyohashi University of Technology) (Conference Track)
 - 11:11 **Spotlight** **Poster Tue08** “**Learning to Aggregate: Tackling the Aggregation/Disaggregation Problem for OWA**” Vitalik Melnikov (Paderborn University); Eyke Hüllermeier (University of Paderborn) (Conference Track)
 - 11:14 **Spotlight** **Poster Tue09** “**Learning to Augment with Feature Side-information**” Amina Mollaysa (university of geneva); Alexandros Kalousis (AU Geneva); Eric Bruno (Expedia); Maurits Diephuis (University of Geneva) (Conference Track)
 - 11:17 **Spotlight** **Poster Tue10** “**Self-Paced Multi-Label Learning with Diversity**” Seyed Amjad Seyedi (University of Kurdistan); S.Siamak Ghodsi (University of Kurdistan); Fardin Akhlaghian Tab (University of Kurdistan); Mahdi Jalili (RMIT University); Parham Moradi (University of Kurdistan) (Conference Track)
 - 11:20 **Spotlight** **Poster Tue11** “**FEARS: a FEature And Representation Selection approach for time series classification**” Alexis Bondu (Orange); Dominique Gay (Université de La Réunion); Vincent Lemaire (Orange); Marc Boule (Orange Labs); Eole Cervenka (Orange) (Conference Track)
 - 11:23 **Spotlight** **Poster Tue12** “**Prediction of Crowd Flow in City Complex with Missing Data**” Shiyang Qiu (University of Science and Technology of China); Peng Xu (University of Science and Technology of China); Wei Zheng (Kehang Technology and Information); Wang Junjie (University of Science and Technology of China); Guo Yu (China People’s Police University); Mingyao Hou (Kehang Technology and Information); Hengchang Liu (USTC) (Conference Track)

Session 4: Unsupervised, Semi-supervised Learning, Reinforcement Learning

Day 3 (Nov.19), talks: 10:50-11:30 (5th floor Hall 2), poster session: 11:30-14:00
 Session chair: Takayuki Osogami

- 10:50 **Spotlight** **Poster Tue13** “**Self-Weighted Multi-View Clustering with Deep Matrix Factorization**” Beilei Cui (Dalian University of Technology); Hong Yu (Dalian University of Technology); Tiantian Zhang (Dalian University of Technology); Siwen Li (Dalian University of Technology) (Conference Track)
- 10:53 **Spotlight** **Poster Tue14** “**Latent Multi-view Semi-Supervised Classification**” Xiaofan Bo (University of Electronic Science and Technology); Zhao Kang (University of Electronic Science and Technology of China); Zhitong Zhao (University of Electronic Science and Technology); yuanzhang su (University of Electronic

- Science and Technology); Wenyu Chen (University of Electronic Science and Technology of China) (Conference Track)
- 10:56 **Spotlight** **Poster Tue15** “**Self-Supervised Deep Multi-View Subspace Clustering**” Xiukun Sun (Beijing Jiaotong University); Miaomiao Cheng (Beijing Jiaotong University); Chen Min (Beijing Jiaotong University); Liping Jing (Beijing Jiaotong University) (Conference Track)
 - 10:59 **Spotlight** **Poster Tue16** “**Geometry-Aware Maximum Likelihood Estimation of Intrinsic Dimension**” Marina Gomtsyan (Skolkovo Institute of Science and Technology); Nikita Mokrov (Skolkovo Institute of Science and Technology); Maxim Panov (Skolkovo Institute of Science and Technology); Yury Yanovich (Skolkovo Institute of Science and Technology) (Conference Track)
 - 11:02 **Spotlight** **Poster Tue17** “**Exemplar Based Mixture Models with Censored Data**” Masahiro Kohjima (NTT Corporation); Tatsushi Matsubayashi (NTT Corporation); Hiroyuki Toda (NTT) (Conference Track)
 - 11:05 **Spotlight** **Poster Tue18** “**Efficient Learning of Restricted Boltzmann Machines Using Covariance Estimates**” Vidyadhar Upadhyaya (Indian Institute of Science, Bangalore); P. S.Sastry (Indian Institute of Science) (Conference Track)
 - 11:08 **Spotlight** **Poster Tue19** “**Gradient-based Training of Slow Feature Analysis by Differentiable Approximate Whitening**” Merlin Schueler (RUB); Hlynur Davíð Hlynsson (RUB); Laurenz Wiskott (RUB) (Conference Track)
 - 11:11 **Spotlight** **Poster Tue20** “**Random Projection in Neural Episodic Control**” Daichi Nishio (Kanazawa University); Satoshi Yamane (Kanazawa University) (Conference Track)
 - 11:14 **Spotlight** **Poster Tue21** “**Active Change-Point Detection**” Shogo Hayashi (Kyoto University); Yoshinobu Kawahara (Kyushu University / RIKEN); Hisashi Kashima (Kyoto University/RIKEN Center for AIP) (Conference Track)
 - 11:17 **Spotlight** **Poster Tue22** “**Trust Region Sequential Variational Inference**” Geon-Hyeong Kim (KAIST); Youngsoo Jang (KAIST); Jongmin Lee (KAIST); Wonseok Jeon (MILA, McGill University); Hongseok Yang (KAIST); Kee-Eung Kim (KAIST) (Conference Track)
 - 11:20 **Spotlight** **Poster Tue23** “**Functional Isolation Forest**” Guillaume Staerman (Télécom Paris); Pavlo Mozharovskyi (Télécom Paristech); Stéphan Cléménçon (Télécom ParisTech); Florence d’Alche-Buc (Télécom ParisTech) (Conference Track)

Session 5: Computer Vision

Day 3 (Nov.19), poster session: 11:30-14:00, talks: 14:10-15:25 (5th floor Hall 1)
 Session chair: Gang Niu

- 14:10 **Oral** **Poster Tue24** “**Multi-width Activation and Multiple Receptive Field Networks for Dynamic Scene Deblurring**” Cui Jinkai (Chongqing University); Li Weihong (Chongqing University); Wei Guo (Chongqing university); Gong Weiguo (Chongqing University) (Conference Track)
- 14:25 **Oral** **Poster Tue25** “**LADet: A Light-weight and Adaptive Network for Multi-scale Object Detection**” Jiaming Zhou (Beihang University); Yuqiao Tian (Beihang University); Weicheng Li (Beihang University); Rui Wang (Beihang University); Zhongzhi Luan (Beihang University); Depei Qian (Beihang University) (Conference Track)
- 14:40 **Oral** **Poster Tue26** “**Separate Loss for Basic and Compound Facial Expression Recognition in the Wild**” Yingjian Li (Harbin Institute of Technology (Shenzhen), Shenzhen); Yao Lu (Harbin Institute of Technology (Shenzhen), Shenzhen); Jinxing Li (The Chinese University of Hong Kong (Shenzhen)); Guangming Lu (Harbin Institute of Technology (Shenzhen), Shenzhen) (Conference Track)
- 14:55 **Oral** **Poster Tue27** “**SPoD-Net: Fast Recovery of Microscopic Images Using Learned ISTA**” Satoshi Hara (Osaka University); Weichih Chen (National Taiwan University); Takashi Washio (The Institute of Scientific and Industrial Research, Osaka University); Tetsuichi Wazawa (Osaka University); Takeharu Nagai (Osaka University) (Conference Track)
- 15:10 **Oral** **Poster Tue28** “**Capsule Networks Need an Improved Routing Algorithm**” Inyoung Paik (Deep Bio Inc.); Injung Kim (Handong Global University); Tae-Yeong Kwak (Deep Bio Inc.) (Conference Track)

Session 6: Supervised Learning

Day 3 (Nov.19), poster session: 11:30-14:00, talks: 14:10-15:25 (5th floor Hall 2)
 Session chair: Sinno Pan

- 14:10 **Oral** **Poster Tue29** “**Multi-Label Optimal Margin Distribution Machine**” Zhi-Hao Tan (Nanjing University); Peng Tan (Nanjing University); Yuan Jiang (Nanjing University); Zhi-Hua Zhou (Nanjing university) (Journal Track)
- 14:25 **Oral** **Poster Tue30** “**Multi-Label Learning with Regularization Enriched Label-Specific Features**” Ze-Sen Chen (Southeast University); Min-Ling Zhang (Southeast University) (Conference Track)
- 14:40 **Oral** **Poster Tue31** “**Handling Concept Drift via Model Reuse**” Peng Zhao (Nanjing University); Le-Wen Cai (Nanjing University); Zhi-Hua Zhou (Nanjing university) (Journal Track)
- 14:55 **Oral** **Poster Tue32** “**Deep Learning with a Rethinking Structure for Multi-label Classification**” Yao-Yuan Yang (National Taiwan University); Yi-An

Lin (National Taiwan University); Hong-Min Chu (National Taiwan University); Hsuan-Tien Lin (National Taiwan University) (Conference Track)

- 15:10 **Oral** **Poster Tue33** “**Variational Inference from Ranked Samples with Features**” Yuan Guo (Northeastern University); Jennifer Dy (Northeastern); Deniz Erdogmus (Northeastern University); Jayashree Kalpathy-Cramer (MGH/Harvard Medical School); Susan Ostmo (Oregon Health & Science University); J. Peter Campbell (Oregon Health & Science University); Michael F. Chiang (Oregon Health & Science University); Stratis Ioannidis (Northeastern University) (Conference Track)

Session 7: Reinforcement Learning

Day 3 (Nov.19), poster session: 11:30-14:00, talks: 15:55-17:10 (5th floor Hall 1)
Session chair: Hirotaka Hachiya

- 15:55 **Oral** **Poster Tue34** “**X-Armed Bandits: Optimizing Quantiles, CVaR and Other Risks**” Leonard Torossian (INRA-IMT); Aurélien Garivier (ENS Lyon); Victor Picheny (Prowler) (Conference Track)
- 16:10 **Oral** **Poster Tue35** “**A Continuous Actor-Critic Reinforcement Learning Approach to Flocking with Fixed-Wing UAVs**” Chang Wang (NUDT); Chao Yan (NUDT); XiaojiaXiang (NUDT); HanZhou (NUDT) (Conference Track)
- 16:25 **Oral** **Poster Tue36** “**Real-time tree search with pessimistic scenarios: Winning the NeurIPS 2018 Pommerman Competition**” Takayuki Osogami (IBM Research - Tokyo); Toshihiro Takahashi (IBM) (Conference Track)
- 16:40 **Oral** **Poster Tue37** “**Unified Policy Optimization for Robust Reinforcement Learning**” Zichuan Lin (Tsinghua University); Li Zhao (Microsoft Research); Jiang Bian (Microsoft Research); Tao Qin (Microsoft Research Asia); Guangwen Yang (Tsinghua University) (Conference Track)
- 16:55 **Oral** **Poster Tue38** “**Skill-based Curiosity for Intrinsically Motivated Reinforcement Learning**” Nicolas Bougie (National Institute of Informatics); Ryutaro Ichise (National Institute of informatics) (Journal Track)

Session 8: Unsupervised and Semi-supervised Learning

Day 3 (Nov.19), poster session: 11:30-14:00, talks: 15:55-17:10 (5th floor Hall 2)
Session chair: Yu-Feng Li

- 15:55 **Oral** **Poster Tue39** “**Joint Consensus and Diversity for Multi-view Semi-supervised Classification**” Wenzhang Zhuge (National University of Defense Technology); Chenping Hou (National University of Defense Technology); Shaoliang Peng (Hunan University); Dongyun Yi () (Journal Track)
- 16:10 **Oral** **Poster Tue40** “**Principled analytic classifier for positive-unlabeled learning via weighted integral probability metric**” Yongchan Kwon (Seoul National University); Wonyoung Kim (Seoul National University); Masashi Sugiyama (RIKEN/The University of Tokyo); Myunghye Cho Paik (Seoul National University) (Journal Track)
- 16:25 **Oral** **Poster Tue41** “**Canonical Soft Time Warping**” Keisuke Kawano (Toyota Central R&D Labs., Inc); Satoshi Koide (Toyota Central R&D Labs., Inc.); Takuro Kutsuna (Toyota Central R&D Labs. Inc.) (Conference Track)
- 16:40 **Oral** **Poster Tue42** “**Rank minimization on tensor ring: An efficient approach for tensor decomposition and completion**” Longhao Yuan (Saitama Institute of Technology/RIKEN AIP); Chao Li (RIKEN); jianting cao (Saitama Institute of Technology); Qibin Zhao (RIKEN AIP) (Journal Track)
- 16:55 **Oral** **Poster Tue43** “**Hyperbolic Ordinal Embedding**” Atsushi Suzuki (The University of Tokyo); Jing Wang (The University of Tokyo); Feng Tian (Bournemouth University); Atsushi Nitanda (The University of Tokyo / RIKEN); Kenji Yamanishi (The University of Tokyo) (Conference Track)



Crafting

DENSO

Crafting the Core

We, humans, have crafted our own futures.
That is what we do.

At DENSO we pride ourselves in our abilities,
and the technologies our people bring to life.
All over the world, employees and partners
of different backgrounds come together
to achieve the impossible.

Tell us it's impossible,
and it will only strengthen our resolve
and fuel our passion for craftsmanship.

**Yes, we are crafting the future,
with our own hands and hearts.**



the Core

NEC. Your Public Safety Partner



Peaceful urban scenes hide sophisticated safety solutions

Safety in the city is one of the greatest needs today. That is why NEC works 24/7, designing and installing modern technological solutions to increase your safety and quality of life in various cities around the world. Count on NEC's public safety solutions for a more protected, safe and brighter society.



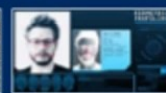
Surveillance



Video analytics



Fingerprint
Recognition



Face recognition



Driving Digital Transformation for a Smarter Society

Digital transformation continues to reshape our world, providing unlimited opportunities for innovators.

NEC integrates Artificial Intelligence technologies into a diverse portfolio of information and communication technology solutions that enables cities and societies to become smarter and sustainable.

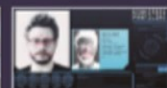
Working closely together with customers and partners, NEC will continue to co-create new social value to realize a brighter world.



Interagency operation



Urban surveillance



Face recognition



Video analytics



Education for Tomorrow

Join our team!

We transform early education through data.

AI/DEEP LEARNING RESEARCHER

MACHINE LEARNING RESEARCHER

DATA SCIENTIST

DEVOPS ENGINEER

SENIOR BACKEND DEVELOPER

SENIOR DATA ENGINEER



Apply at:
<https://calmisland.bamboohr.com/jobs/>

Calm Island



Education for Tomorrow

NVIDIA® DGX Family

Developed to meet the demands of AI and analytics, NVIDIA® DGX™ Systems are built on the revolutionary NVIDIA Volta™ GPU platform. Combined with innovative GPU-optimized software and simplified management tools, these fully-integrated solutions deliver groundbreaking performance and results.



NVIDIA.DGX-2™

16
GPU

NV-SWITCH



Break through the barriers to AI speed and scale with NVIDIA DGX-2, the first 2 petaFLOPS system that engages 16 fully interconnected GPUs for 10X the deep learning performance. Powered by NVIDIA® DGX™ software and an architecture designed for AI-scale built on NVIDIA NVSwitch, DGX-2 enables you to take on the world's most complex deep learning challenges.

NVIDIA.DGX-1™

8
GPU

NV-LINK

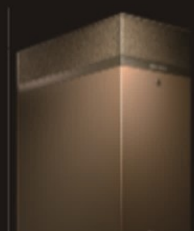


The essential instrument for AI research, designed to accelerate your data center and streamline your deep learning workflow. Experiment faster, train larger models and get insights starting on day one. Now offered with NVIDIA Volta™, NVIDIA DGX-1 delivers industry-leading performance for AI and deep learning.

NVIDIA.DGX-Station™

4
GPU

NV-LINK



NVIDIA® DGX Station™ is the world's fastest workstation for leading-edge AI development for data science teams. This fully integrated and optimized system enables your team to get started faster and effortlessly experiment with the power of a data center in your office.

NVIDIA
Support & Services

NVIDIA DGX systems have annual support and services for a charged option. NVIDIA Support & Services has local hardware support and deep learning know-how, expert training, software upgrades and updates, and enterprise-grade support that prioritizes critical issues.

GDEP DGX
support service

We offer a wide range of user needs from hardware device proposals, installation and installation of NVIDIA DGX, support for various frameworks using NVIDIA Docker, private seminars and Q & A support, consulting to development support through hardware Offers a special service menu. These one-stop services for introducing DGX are available for a fee.

GDEP は NVIDIA Partner Network (NPN) における DeepLearning 「ELITE」 Partner 認定企業です。
NVIDIA DGX-2 販売資格条件「Advanced Technology Program(ATP)」を満たした NVIDIA 認定セールスパートナーです。



GDEP Advance, Inc.

<http://www.gdep.co.jp/>



03-6803-0620

受付時間：平日/9:00 ~ 17:00

Join Our Team !

At MUFG AI Studio(M-AIS), we are raising revolutions to the financial services with machine learning technologies. We are looking for researchers and data scientists who are interested in large-scale financial transaction data and creating new intelligent financial services.

Positions

Postdoctoral Researchers

- Participate in cutting edge research in machine learning theories and machine learning applications in financial services, such as credit scoring, market forecasting, marketing and fraud detection.
- Contribute to research communities, including presentations and publications at conferences or workshops (such as NeurIPS, ICML, KDD).
- You will collaborate with Taiji Suzuki who is assistant professor at University of Tokyo.

Data Scientists

- Develop and integrate intelligent solutions which make financial and banking services smarter with strong machine learning and data mining knowledge.
- Leverage on the MUFG proprietary data and GPU-compute infrastructure to develop machine learning models for challenging problems in the FinTech field.

Who We Are

Mitsubishi UFJ Financial Group is a Japan based Global financial service group which includes MUFG Bank (the biggest bank in Japan). MUFG established Japan Digital Design two years ago, in order to provide customers the most frictionless and intelligent experience in the world. M-AIS, which was set up by JDD on April 2018, contributes to create new business innovations through ambitious researches on the artificial intelligence technology.



<https://japan-d2.com/m-ais>

Visit Our Sponsor booth !

For further information, please feel free to talk with our team members !

Advertisement: QuantumBlack

Please see the printed version.

ソフトバンク株式会社



ソフトウェアの流通から始まり、携帯電話やロボット、そして人工知能の領域まで事業を拡大してきたソフトバンクグループ。

創業以来、時代に先駆けて進化してきましたが、

全ては「情報革命で人々を幸せに」という経営理念を実現させるためでした。

人々に笑顔と感動を、そして幸せを届け続けたい。最先端のテクノロジーと共に、人々の新しい未来を創造したい。

国内外のモバイルインターネットを基盤として、人工知能、ロボット、IoT事業などの革新的な領域へ進んで挑戦してきました。

これからはソフトバンクグループ、SoftBank Vision Fundの投資先など、世界中の会社とJVを立ち上げていきます。

「Beyond Carrier, Beyond Japan」の戦略のもと、携帯キャリアの枠を超え、最先端テクノロジーを活用し、世の中を変えていくプロダクト・サービスを提供していきます。

会社概要

エンジニア職：職種/仕事内容

本社住所	105-7313 東京都港区東新橋1-9-1東京汐留ビルディング	<ul style="list-style-type: none"> ・AI&データサイエンス AIサービスの設計・構築、AIサービスを利用したシステム設計開発 ・ネットワークエンジニア 電波測定・調査分析、新規基地局の設置ポイント提案 ・システムエンジニア 障害検証、検証シナリオ作成、テスト実施・検証、開発支援ツール開発 ・プロダクト開発・サービス開発 端末検証業務、アプリ動作テスト、端末デザイン企画業務サポート ・研究開発 LTE 基本特性評価、基地局パラメータ調整評価、複数端末接続評価 ・ソリューションエンジニア 営業同行、システム導入業務サポート、運用シミュレーションなど 	
事業所	全国		
設立	1986年12月		
代表者	宮内 謙		
資本金	177,251百万円		
事業内容	<small>移動通信サービスの提供、携帯端末の販売 固定通信サービスの提供、インターネット接続サービスの提供</small>		
売上高	ソフトバンクグループ連結売上高 9兆1,587億円(2018年度)		
従業員数	約17,200人		
就業時間	<small>実働7時間45分 ※ スーパーフレックスタイム制あり</small>		
休日休暇	週休2日制(年間休日日数 122日/2018年度実績)		
福利厚生	<small>財形貯蓄、持株会、確定拠出年金制度 育児支援制度、福利厚生サービス会社提携 など</small>		
教育制度	<small>新入社員研修、新任管理職層研修、各種スキル研修、英語 統計テクノロジー研修、その他eラーニングを活用した多様なプログラムなど</small>	応募・選考方法	
給与	詳細は採用HPよりご確認ください	応募資格	国内外の大学院、大学、高等専門学校
昇給	年1回(原則)	受付時期	詳細は HP よりご確認ください
勤務地	全国各地、海外転勤あり	応募方法	
		選考方法	

詳しくはこちらから <http://recruit.softbank.jp/graduate/>

Advertisement: Toshiba Corporation

Please see the printed version.

Advertisement: Toyota Motor Corporation

Please see the printed version.

