

CURRICULUM VITAE

SHIRO IKEDA

CURRENT POSITION

Professor
Department of Statistical Inference and Mathematics
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PERSONAL DETAILS

Gender: Male
Date of birth: 21/December/1968
Place of birth: Tokyo, Japan
Private Address: 3-25-1 Nukuikita-machi, Koganei, Tokyo 184-0015, Japan
Present Citizenship: Japanese

EDUCATION

- Apr/1993–Mar/1996 Doctor course student of Mathematical Engineering and Information Physics at the University of Tokyo, Japan.
(Doctor of Engineering, March, 1996).
Thesis : *Estimating the structure of the sources*;
(Under supervision of Professor Kaoru Nakano)
- Apr/1991–Mar/1993 Master course student of Mathematical Engineering and Information Physics at the University of Tokyo, Japan.
(Master of Engineering, March, 1993).
Thesis: *Construct the structure of Hidden Markov Models*;
(Under supervision of Professor Kaoru Nakano)
- Apr/1987–Mar/1991 Undergraduate student of Mathematical Engineering and Information Physics at the University of Tokyo, Japan.
(Bachelor of Engineering, March, 1991).

EXPERIENCE

- Apr/2016–Present Professor
The Institute of Statistical Mathematics, Tokyo, Japan
- Feb/2003–Mar/2016 Associate Professor
The Institute of Statistical Mathematics, Tokyo, Japan
- Apr/2001–Jan/2003 Associate Professor
Department of Brain Science and Engineering,
Graduate School of Life Science and Systems Engineering,
Kyushu Institute of Technology, Fukuoka, Japan
- Oct/1998–Mar/2001 Researcher
“Information and Human Activity,” PRESTO, Japan Science and
Technology Corporation (JST), Saitama, Japan
- Apr/1996–Sep/1998 Special Postdoctoral Researcher
The Institute of Physical and Chemical Research (RIKEN), Saitama,
Japan
- Jan/1996–Mar/1996 Research Fellow
Japan Society for the Promotion of Science (PD), Tokyo, Japan

Visiting Positions

- Apr/2017– Visiting Professor
National Astronomical Observatory of Japan
- May/2016– Visiting Senior Scientist
Kavli IPMU, The University of Tokyo
- May/2022–July/2022 Theoretical Science Visiting Program
Okinawa Institute of Science and Technology,
- Apr/2010–Mar/2016 Visiting Associate Professor
Department of Computational Intelligence and Systems Science,
Tokyo Institute of Technology
- Apr/2008–Oct/2008 Visiting Academic
Department of Electrical & Electronic Engineering, The University of
Melbourne
- Oct/2007–Apr/2008 Visiting Academic
The Research School of Information Sciences & Engineering (RSISE),
Australian National University
- Apr/2004–Mar/2006 Visiting Researcher
Mathematical Neuroscience Laboratory, Brain-Style Information Sys-
tem Group, Brain Science Institute, The Institute of Physical and
Chemical Research (RIKEN)

Apr/2003–Mar/2004 Visiting Academic
 Gatsby Computational Neuroscience Unit, University College London,
 (under the fellowship between Japan Society for the Promotion of
 Science, and Royal Society)

ACADEMIC HONORS AND AWARDS

Jan/2021	Royal Astronomical Society 2021 Group Achievement Award Winner: The Event Horizon telescope (EHT)
May/2020	2020 Einstein Medal Winner: Event Horizon Telescope (EHT) Scientific Collaboration
Sep/2019	2020 Breakthrough Prize in Fundamental Physics Winner: The Event Horizon Telescope Collaboration
May/2019	National Science Foundation Diamond Achievement Award Winner: The Event Horizon Telescope Collaboration
Sep/2001	Japan Neural Network Society Best Paper Award S. Ikeda and K. Toyama “Independent component analysis for noisy data–MEG data analysis,” Neural Networks, 13(10), 2000

EDITORIAL BOARD MEMBERSHIP & SCIENTIFIC EXPERT

Associate editor Annals of the Institute of Statistical Mathematics (2008–2017),
 IEEE transactions on Neural Networks and Learning Systems (2012–2014)

Co-editor Annals of the Institute of Statistical Mathematics (2005–2008)

Action Editor Neural Information Processing – Letters and Reviews (2005–)

Editor Neural Networks (2006–2013)

International Program Committee ICA2003 (Kyoto, Japan), ICA2006 (Charleston,
 USA)

Local Organizing Committee 2nd International Symposium on Information Geometry
 and its Applications, December, 2005 Tokyo, Japan

Technical Committee ISCA Tutorial and Research Workshop on Statistical and Percep-
 tual Audio Processing, October 2004, Jeju, Korea

Review experiences

Journals IEEE transactions (Biological Engineering, Communications, Information
 Theory, Neural Networks, and, Signal and Audio Proccession), IEEE Pro-
 ceedings, Neurocomputing, IEICE transactions, Signal Processing, Neu-
 ral Networks, Physical review research, Publications of the Astronomical
 Society of Japan, Astronomy & Astrophysics, The Astronomical Journal,
 Journal of the Royal Statistical Society B, Monthly Notices of the Royal
 Astronomical Society, Information geometry, Entropy, Journal of Machine
 Learning Research, Nature Methods

Conferences Artificial Intelligence and Statistics, Neural Information Processing Systems (NIPS) (1999–2015), International Conference on Machine Learning (ICML) (2007), Series of ICA (Independent Component Analysis and Blind Source Separation) conferences, IEEE International Symposium on Information Theory (ISIT), IEEE Information Theory Workshop (ITW), IEEE International Joint Conference on Neural Networks (IJCNN) International Conference on Artificial Neural Networks,

TEACHING

Courses

Observational Astronomy, Advanced Course II

- Department of Astronomy, The University of Tokyo
- Intensive course, Japanese, 2021

Special Lecture on Astronomy IX

- Department of Astronomical Science, SOKENDAI
- Intensive course, English, 2020

Interstellar Physics Special Lecture

- Department of Physics, Nagoya University
- Intensive course, Japanese, 2018

Lecture Series of Data Science in Physics

- Graduate School of Arts and Science, The University of Tokyo
- Intensive course, Japanese, 2018

Lecture Series of Data Science in Astronomy

- Graduate School of Science, The University of Tokyo
- Intensive course, Japanese, 2017

Compressed sensing: Theory and Applications

- Department of Informatics, Kyushu University
- Intensive course, Japanese, 2012, 2013

Lecture Series of Computational Mathematics 1

- Graduate School of Information Science, Nagoya University
- Intensive course, Japanese, 2005

Brain Style Pattern Recognition

- Department of Brain Science and Engineering, Kyushu Institute of Technology
- Regular course, Japanese, 2001, 2002

Ph.D Students

Masatoshi Hamada (Graduate University of Advanced Studies)
Yuichi Shiraishi (Graduate University of Advanced Studies)

GRANTS

- 2020–2023 (granted) JSPS Kakenhi, Grant-in-Aid for Scientific Research (B), 20H01951
“New imaging method for ALMA with sparse modeling”
Principal-Investigator
- 2020–2022 (granted) JST, AIP Acceleration Research
“Cosmology with Big Astronomical Data Using Innovative Image Analysis Methods”
Co-Investigator (PI: Naoki Yoshida)
- 2019–2024 (granted) JSPS Kakenhi, Fund for the Promotion of Joint International Research (B), 19KK0081
“Exploring dynamic pictures of supermassive black holes with movie reconstruction from event-horizon-scale observations”
Co-Investigator (PI: Mareki Honma)
- 2017–2020 JSPS Kakenhi, Grant-in-Aid for Scientific Research (A), 17H01116
“Development of commensal FRB search engine for VERA and observational studies of transient sources”
Co-Investigator (PI: Mareki Honma)
- 2014–2019 JST, CREST
“Statistical Computational Cosmology with Big Astronomical Imaging Data”
Co-Investigator (PI: Naoki Yoshida)
- 2013–2017 MEXT Kakenhi, Grant-in-Aid for Scientific Research on Innovative Areas, Initiative for High-Dimensional Data-Driven Science through Deepening of Sparse Modeling, 25120008
“Approach to sparse modeling based on compressed sensing Planned”
Co-Investigator (PI: Toshiyuki Tanaka)
- 2013–2015 MIC, SCOPE
“Research and development of a small-degree-of-freedom interface for multi-degree-of-freedom remote-robot control”
Co-Investigator (PI: Jun Morimoto)
- 2012–2014 JSPS Kakenhi, Grant-in-Aid for Scientific Research (C), 24560490
“Communication channel capacity and optimization of probability measure”
Principal-Investigator
- 2010–2013 JSPS Kakenhi, Grant-in-Aid for Scientific Research (B), 22300098
“Mathematical foundation of efficient algorithms for statistical inference”
Co-Investigator (PI: Kenji Fukumizu)
- 2009–2012 JSPS Kakenhi, Grant-in-Aid for Scientific Research (B), 21300092
“Extraction of synergetic structure of whole body movements and its application to human assisting system”
Co-Investigator (PI: Yutaka Sakaguchi)

2006–2009	MEXT Kakenhi, Grant-in-Aid for Scientific Research on Priority Areas, 18079013 “Theoretical analysis and information engineering application of approximate inference methods” Principal-Investigator
2004–2006	JSPS Kakenhi, Grant-in-Aid for Young Scientists (B), 16700227 “Information geometrical analysis of the cluster variational method” Principal-Investigator
2004–2007	JSPS Kakenhi, Grant-in-Aid for Scientific Research (B), 16300088 “New statistical methodology for genome diversity analysis” Co-Investigator (PI: Shinto Eguchi)
2003–2005	MEXT Kakenhi, Grant-in-Aid for Scientific Research on Priority Areas, 14084208 “Analysis of Belief Propagation algorithms based on Information Geometry” Co-Investigator (PI: Yoichi Motomura)
2002	MEXT Kakenhi, Grant-in-Aid for Scientific Research on Priority Areas, 14084208 “Analysis of Belief Propagation algorithms based on Information Geometry” Principal-Investigator
1998–2001	JST, PRESTO “Mathematical analysis of the EM algorithm and its applications in engineering” Principal-Investigator

(information as of 20 February, 2022)