

# CURRICULUM VITAE

SHIRO IKEDA

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## CURRENT POSITION

Professor  
Department of Statistical Inference and Mathematics  
The Institute of Statistical 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 Nukuikitamachi, Koganei, Tokyo 184-0015, Japan  
Present Citizenship: Japanese

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## 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).

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## 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

## Visiting Positions

- Apr/2017– Visiting Professor  
National Astronomical Observatory of Japan
- May/2016– Visiting Senior Scientist  
Kavli IPMU, The University of Tokyo
- 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 and 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)

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## EDITORIAL BOARD MEMBERSHIP

- 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)
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## GRANTS

- 2020–2023 (granted) JSPS Kakenhi, Grant-in-Aid for Scientific Research (B)  
“New imaging method for ALMA with sparse modeling”  
Principal-Investigator  
20H01951
- 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)  
“Exploring dynamic pictures of supermassive black holes with movie reconstruction from event-horizon-scale observations”  
Co-Investigator (PI: Mareki Honma)  
19KK0081
- 2017–2020 (granted) JSPS Kakenhi, Grant-in-Aid for Scientific Research (A)  
“Development of commensal FRB search engine for VERA and observational studies of transient sources”  
Co-Investigator (PI: Mareki Honma)  
17H01116
- 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  
“Approach to sparse modeling based on compressed sensing Planned”  
Co-Investigator (PI: Toshiyuki Tanaka)  
25120008

- 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)  
“Communication channel capacity and optimization of probability measure”  
Principal-Investigator  
24560490
- 2010–2013 JSPS Kakenhi, Grant-in-Aid for Scientific Research (B)  
“Mathematical foundation of efficient algorithms for statistical inference”  
Co-Investigator (PI: Kenji Fukumizu)  
22300098
- 2009–2012 JSPS Kakenhi, Grant-in-Aid for Scientific Research (B)  
“Extraction of synergetic structure of whole body movements and its application to human assisting system”  
Co-Investigator (PI: Yutaka Sakaguchi)  
21300092
- 2006–2009 MEXT Kakenhi, Grant-in-Aid for Scientific Research on Priority Areas  
“Theoretical analysis and information engineering application of approximate inference methods”  
Principal-Investigator  
18079013
- 2004–2006 JSPS Kakenhi, Grant-in-Aid for Young Scientists (B)  
“Information geometrical analysis of the cluster variational method”  
Principal-Investigator  
16700227
- 2004–2007 JSPS Kakenhi, Grant-in-Aid for Scientific Research (B)  
“New statistical methodology for genome diversity analysis”  
Co-Investigator (PI: Shinto Eguchi)  
16300088
- 2003–2005 MEXT Kakenhi, Grant-in-Aid for Scientific Research on Priority Areas  
“Analysis of Belief Propagation algorithms based on Information Geometry”  
Co-Investigator (PI: Yoichi Motomura)  
14084208
- 2002 MEXT Kakenhi, Grant-in-Aid for Scientific Research on Priority Areas  
“Analysis of Belief Propagation algorithms based on Information Geometry”  
Principal-Investigator  
14084208

1998–2001 JST, PRESTO  
“Mathematical analysis of the EM algorithm and its applications in engineering”  
Principal-Investigator

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#### 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

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#### SCIENTIFIC EXPERT

##### Reviewer

**Journals** IEEE transactions (Biological Engineering, Communications, Information Theory, Neural Networks, and, Signal and Audio Procession), IEEE Proceedings, Neurocomputing, IEICE transactions, Signal Processing, Neural Networks,

**Conferences** 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 (2000–).

**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 Perceptual Audio Processing, October 2004, Jeju, Korea

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## TEACHING

### Courses

#### **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)

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(information as of April 26, 2021)