

# Futoshi Futami

Researcher at NTT Communication Science Laboratories  
Kyoto, Japan

<https://futoshi-futami.github.io/>  
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## Education

Ph.D. Graduate school of Frontier Science, the University of Tokyo Sep.2016 – Mar.2020  
Supervisor: Masashi Sugiyama  
Thesis title: Robust and Computationally-Efficient Approximate Bayesian Inference

M.S. Physics, Graduate school of Science, the University of Tokyo Apr.2013 – Mar.2015  
Supervisor: Seiji Miyashita  
Thesis title: Static and dynamical properties of magnetic order in small world networks

B.A. Physics, the University of Tokyo Apr.2009 – Mar.2013

## Employment

Researcher Apr. 2020 -  
NTT Communication Science Laboratories

Research Internship June. 2019 - Sep. 2019  
Google Brain at Mountain View

Research Internship Sep. 2018 - Dec. 2018  
Microsoft Research Asia

Research Assistant Apr. 2017 – Mar. 2020  
RIKEN Center for Advanced Intelligence Project

Staff in Planning division Apr.2015 – Dec.2016  
Financial Services Agency, Japanese Government

## Awards & Funding

1. Dean's Award for Outstanding Achievement Doctoral Course Graduate School of Frontier Sciences 2020
2. ACT-X: A research funding for excellent young researchers sponsored by Japan Science and Technology Agency (42000 USD) 2019
3. IEICE TC-IBISML Research Award, IEICE, Information-Based Induction Sciences and Machine Learning (IBISML) Technical Group 2018
4. Google PhD Fellowship (10000USD) 2018

5. AIP Prism Program : A research funding for excellent young researchers sponsored by Japan Science and Technology Agency (23000 USD) 2018
6. TOYOTA and DWANGO scholarship 2018 (12000 USD) 2018
7. TOYOTA and DWANGO scholarship 2017 (12000 USD) 2017
8. AIP Challenge Program : A research funding for excellent young researchers sponsored by JST (10000 USD) 2017
9. NIPS travel award (1000 USD) 2017
10. Workshop Travel award, Advances in Approximate Bayesian Inference (AABI) NIPS2017 (500 USD) 2017
11. Selected as a contributed talk at NIPS AABI workshop. 2017

## Publications

### Conference paper

1. **F. Futami**, I. Sato, & M. Sugiyama. Accelerating the diffusion-based ensemble sampling by non-reversible dynamics. International Conference on Machine learning, 2020. (ICML 2020)
2. **F. Futami**, Z. Cui, I. Sato, & M. Sugiyama. Bayesian posterior approximation via greedy particle optimization, Thirty-Third AAAI Conference on Artificial Intelligence. (AAAI-19)
3. **F. Futami**, I. Sato, & M. Sugiyama. Variational Inference based on Robust Divergences. In Artificial Intelligence and Statistics, 2018. (AISTATS 2018)
4. **F. Futami**, I. Sato, & M. Sugiyama. Expectation Propagation for t-exponential family using q-Algebra. In Neural Information Processing Systems, 2017. (Neurips 2017)

### Journal paper

1. F. Futami, T Iwata, N Ueda, & I. Sato. Accelerated Diffusion-Based Sampling by the Non-Reversible Dynamics with Skew-Symmetric Matrices, Entropy, 23(8), 2021. ISSN1099-4300.

### Workshops/Technical Reports

1. **F. Futami**, I. Sato, & M. Sugiyama Dec. 25-26, 2017  
Expectation Propagation for t-exponential family using q-Algebra  
Presented at ERATO Winter Festa Episode 3, Tokyo, Japan
2. **F. Futami**, I. Sato, & M. Sugiyama Dec. 8, 2017  
Variational Inference based on Robust Divergences  
Advances in Approximate Bayesian Inference, NIPS 2017 Workshop
3. **F. Futami**, I. Sato, & M. Sugiyama Jun. 23, 2017  
Expectation Propagation for t-exponential family using q-Algebra  
IEICE Technical Report, IBISML, Okinawa

### Unpublished paper

1. **F. Futami**, T Iwata, N Ueda, I. Sato, & M. Sugiyama. Loss function based second-order Jensen inequality and its application to particle variational inference (<https://arxiv.org/abs/2106.05010>)
2. H. Imamura, N. Charoenphakdee, **F. Futami**, I. Sato, J. Honda, & M. Sugiyama. Time-varying Gaussian Process Bandit Optimization with Non-constant Evaluation Time (<https://arxiv.org/abs/2003.04691>)

## Talks

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| 1. The 23th Information-Based Induction Science Workshop (IBIS2020), Tokyo   | Oct. 25, 2020 |
| 2. Invited talk at NTT communication science laboratories, Kyoto             | Apr. 5, 2019  |
| 3. AAAI-19, spotlight talk, search & constrained optimization, Hawaii        | Jan. 31, 2019 |
| 4. Second International Workshop on Symbolic-Neural Learning, Nagoya         | July. 5, 2018 |
| 5. Toshiba R&D Center, Media AI Department, Kanagawa.                        | Jan. 12, 2018 |
| 6. Graph-mining & WEB & AI seminar, National Institute of Informatics, Tokyo | Jan. 11, 2018 |
| 7. Advances in Approximate Bayesian Inference, NIPS 2017 Workshop            | Dec. 8, 2017  |
| 8. The 20th Information-Based Induction Science Workshop (IBIS2017), Tokyo.  | Nov. 8, 2017  |

## Teaching

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| 1. Invited lecture at RIKEN, Advanced Intelligence Project<br>Basics of machine learning | 2017, 2018 |
| 2. Teaching assistant, the University of Tokyo<br>Advanced course of statistical physics | 2013       |

## Professional Service

### Conference reviewing

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| 1. Neural Information Processing Systems                       | 2021 |
| 2. International Conference on Machine Learning                | 2021 |
| 3. International Conference on Learning Representations        | 2021 |
| 4. Advances in Approximate Bayesian Inference (AABI)           | 2021 |
| 5. Artificial Intelligence and Statistics                      | 2021 |
| 6. Neural Information Processing Systems                       | 2020 |
| 7. International Conference on Machine Learning                | 2020 |
| 8. International Conference on Learning Representations        | 2020 |
| 9. Advances in Approximate Bayesian Inference (AABI)           | 2020 |
| 10. Neural Information Processing Systems                      | 2019 |
| 11. International Conference on Machine Learning               | 2019 |
| 12. Neural Information Processing Systems                      | 2018 |
| 13. Association for the Advancement of Artificial Intelligence | 2018 |
| 14. International Conference on Learning Representations       | 2018 |
| 15. Advances in Approximate Bayesian Inference                 | 2018 |

### Journal reviewing

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| 1. Machine Learning | 2018- |
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