Sotetsu Koyamada

Graduate School of Informatics, Kyoto University
Yoshidahonmachi 36-1, sakyo-ku, Kyoto-city, Kyoto, Japan. 606-8501
koyamada-s@sys.i.kyoto-u.ac.jp
https://sotets.uk

INTERESTS

I am interested in developing machine learning solutions for familiar problems to us by utilizing both of the engineering approach and scientific method. As a research topic, my primary interest is reinforcement learning, and I am particularly interested in both theoretical and practical interface between its algorithms and other fields of machine learning. I am also interested in neural networks and natural language processing as well.

EDUCATION

Ph.D. candidate of Informatics Apr 2015 - Present
Kyoto University
Advisor: Shin Ishii

Master of Informatics Apr 2013 - Mar 2015
Kyoto University
Advisor: Shin Ishii
Thesis title: "Principal Sensitivity Analysis and Its Application to Knowledge Discovery in Functional Neuroimaging"

Bachelor of Economics Apr 2008 - Mar 2013
Kyoto University
Advisor: Masaaki Iiyama

PROFESSIONAL EXPERIENCE

Research intern Apr 2018 - Present
Microsoft Research Asia, Beijing, China
Engaged in developing a super human AI on a popular imperfect information game with large state space. The roles include investigating a novel reinforcement learning algorithm, developing server-side system and introducing the domain knowledge of the game to the other team members.

Research assistant Aug 2016 - Mar 2018
National Institute of Advanced Industrial Science and Technology, Tokyo, Japan
Developed a new training objective function for neural sequence prediction, which uses α-divergence to theoretically bridge the gap between maximum likelihood-based methods and reinforcement learning.

Machine learning engineer Apr 2015 - Mar 2018
Recruit Holdings Co., Ltd., Tokyo, Japan
Constructed predictive APIs on Hadoop and Spark platform to improve KPI (key performance indicator) performances for more than 30 web services.

Research intern Oct 2013 - Mar 2015
ATR Cognitive Mechanisms Laboratories, Kyoto, Japan
Developed a subject-independent brain decoder using neural networks and proposed a new algorithm for data-driven scientific discovery from nonlinear classifiers.

RESEARCH

Books

- **S. Koyamada** et al.: Japanese translation of "Algorithms for Reinforcement Learning" by C. Szepesvári, Kyoritsu Shuppan.
  - Chief editor. Managed the entire project ran by 12 team members.
  - Wrote an additional chapter about deep reinforcement learning.

Publications (refereed)

- **S. Koyamada**, Y. Kikuchi, A. Kanemura, S. Maeda, and S. Ishii: "Neural sequence model training via α-divergence minimization." ICML Workshop on Learning to Generate Natural Language, 2017.
- **S. Koyamada**, M. Koyama, K. Nakae, and S. Ishii: "Principal sensitivity analysis." In Proceedings of the Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD), 621-632, 2015.
- **S. Koyamada**, Y. Shikauchi, K. Nakae, and S. Ishii: "Construction of subject independent brain decoders for human fMRI with deep learning." The International Conference on Data Mining, Internet Computing, and Big Data, 60-68, 2014.

Pre-prints (not refereed)

- **S. Koyamada**, Y. Shikauchi, K. Nakae, M. Koyama, S. Ishii "Deep learning of fMRI big data: a novel approach to subject-transfer decoding." arXiv:1502.00093, 2015.

Other presentations (not refereed)

- **S. Koyamada**: "Principal Sensitivity Analysis." Machine Learning Summer School 2015 Kyoto, Kyoto, Sep 1, 2015 (poster presentation)
- **S. Koyamada**, Y. Shikauchi, K. Nakae, M. Koyama, and S. Ishii: "Knowledge Discovery for Nonlinear Classifier in Functional Neuroimaging." 10th AEARU Workshop on Computer Science and Web Technology, Tsukuba, Feb 26, 2015 (poster presentation)
- **S. Koyamada**, Y. Shikauchi, K. Nakae, and S. Ishii: "Learning the subject-independent discriminative features from the large-scale fMRI database." Neuro2014, Yokohama, Sep 13, 2014 (poster presentation)

GRANTS AND SCHOLARSHIPS

Student Scholarship Apr 2013 - Mar 2015
Japan Student Services Organization (JASSO), Japan
Approx. 1,056,000 yen

TEACHING

Teaching assistant Jul 23, 2014
Lecture sessions on deep learning, Kyoto University, Japan

Teaching assistant Oct 2013 - Mar 2014
"Introduction to Computer Science." Kyoto University, Japan

SKILLS

Programming skills

- Programming language: Python, Go, C#, C++, Java, R
  - GitHub repo: https://github.com/sotetsuk
- Deep learning framework: PyTorch, Chainer, TensorFlow
- Middleware/Infrastructure: Docker, AWS, GCP, RDBMS, Hadoop, Spark

- Others: Git, SQL, LaTeX

Language
Japanese (native), English