Sotetsu Koyamada

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RESEARCH INTERESTS

My primary research 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, natural language processing, and sensitivity analysis in general as well.

EDUCATION

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

Master of Informatics   Apr 2013 - Mar 2015
Kyoto University
Supervisor: 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
Supervisor: Masaaki Iiyama

PROFESSIONAL EXPERIENCE

Research internship   Aug 2016 - Present
National Institute of Advanced Industrial Science and Technology, Japan
Developed a new training objective function for neural sequence prediction, which generalizes the maximum likelihood-based and reinforcement learning-based objective functions using α-divergence.

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

Research internship   Oct 2013 - Mar 2015
ATR Cognitive Mechanisms Laboratories, 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** Japan Student Services Organization (JASSO), Japan Approx. 1,056,000 yen	Apr 2013 - Mar 2015
TEACHING	**Teaching assistant** Lecture sessions on deep learning, Kyoto University, Japan	Jul 23, 2014
	Teaching assistant "Introduction to Computer Science." Kyoto University, Japan	Oct 2013 - Mar 2014

SKILLS

Programming skills

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

Language
Japanese (native), English