

KAI XU

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ABOUT ME

I am a third year Ph.D Student at School of Informatics, University of Edinburgh, working with Charles Sutton. Before this, I completed my master supervised by Zoubin Ghahramani at Cambridge University Engineering Department. Research topics that I am interested in include approximate inference, (deep) generative models, and probabilistic programming.

I am one of the core developers of the *Turing* probabilistic programming language. I write efficient and robust software on Hamiltonian Monte Carlo methods (github.com/TuringLang/AdvancedHMC.jl).

PAPERS

Cole L Hurwitz, Kai Xu, Akash Srivastava, Alessio Paolo Buccino, and Matthias Hennig. Scalable spike source localization in extracellular recordings using amortized variational inference. In *Proceedings of the 33th Conference on Neural Information Processing Systems*, 2019

Kai Xu, Akash Srivastava, and Charles Sutton. Variational russian roulette for deep Bayesian nonparametrics. In *Proceedings of the 36th International Conference on Machine Learning*, 2019

Kai Xu, Akash Srivastava, and Charles Sutton. Amortized Inference for Latent Feature Models Using Variational Russian Roulette. *NeurIPS Workshop for All of Bayesian Nonparametrics*, 2018

Akash Srivastava, Kai Xu, Michael U Gutmann, and Charles Sutton. Ratio Matching MMD Nets: Low dimensional projections for effective deep generative models. *arXiv preprint arXiv:1806.00101*, 2018

Kai Xu, Dae Hoon Park, Chang Yi, and Charles Sutton. Interpreting Deep Classifier by Visual Distillation of Dark Knowledge. *arXiv preprint arXiv:1803.04042*, 2018

Hong Ge, Kai Xu, and Zoubin Ghahramani. Turing: A language for flexible probabilistic inference. In *Proceedings of the 21st International Conference on Artificial Intelligence and Statistics*, 2018

TALKS

Presenter for “The Turing Language for Probabilistic Programming.” at *Julia Lab*, MIT, MA, USA in June 2019 .

Presenter for “Variational Russian Roulette for Deep Bayesian Nonparametrics.” at *MIT-IBM Research*, MIT, CA, USA in June 2019.

Presenter for “Variational Russian Roulette for Deep Bayesian Nonparametrics.” at *The 36th International Conference on Machine Learning*, Long Beach, CA, USA in June 2019.

Copresenter for “The Turing Language for Probabilistic Programming” at *The Inaugural International Conference on Probabilistic Programming*, MIT, MA, USA in October 2018.

Presenter for “Turing: a Fresh Approach to Probabilistic Programming.” at *JuliaCon 2017*, Berkeley, CA, USA in June 2017.

WORK EXPERIENCE

University of Edinburgh, UK

Tutor for Probabilistic Modelling and Reasoning

Worked with Dr. Michael U. Gutmann.

January 2019 - April 2019

University of Edinburgh, UK
Teaching Assistant for Machine Learning and Pattern Recognition
Worked with Dr. Iain Murry.

September 2018 - December 2019

Apple, UK
Machine Learning Intern
Researched on deep generative models for dialogue systems.

May 2018 - August 2018

University of Edinburgh, UK
Teaching Assistant for Design Informatics
Worked with Dr. Benjamin Bach and Dave Murray-Rust.

October 2017 - December 2017

University of Cambridge, UK
Research Assistant at Machine Learning Group
Worked with Prof. Zoubin Ghahramani and Dr. Hong Ge.

November 2016 - July 2017

EDUCATION

University of Edinburgh, UK
Ph.D in Machine Learning
Being supervised by Dr. Charles Sutton

September 2017 - Present

University of Cambridge, UK
M.Phil in Machine Learning, Speech & Language Technology
Supervised by Prof. Zoubin Ghahramani on probabilistic programming

October 2015 - September 2016

University of Liverpool, UK
B.Eng in Computer Science and Electronic Engineering

September 2013 - June 2015

Xi'an Jiaotong-Liverpool University, China
B.Eng in Computer Science & Technology

September 2011 - June 2013

HONORS & AWARDS

Ph.D Studentship
University of Edinburgh

2017 - 2020

International Undergraduate Scholarship
University of Liverpool

2013 - 2015

Academic Excellence Award
Xian Jiaotong-Liverpool University

2012

SKILLS

Programming Julia, Python, Java, MATLAB, C/C++, HTML, CSS, JavaScript
Tooling Git, Vim, Markdown, LaTeX
Language Chinese, Wu Chinese, English

REFERENCES

Dr. Charles Sutton
Google AI, affiliated at the University of Edinburgh

`cutton@inf.ed.ac.uk`

Prof. Zoubin Ghahramani
Uber AI Labs, affiliated at the University of Cambridge

`zoubin@eng.cam.ac.uk`