Yunlong Jiao

Machine Learning Scientist

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ABOUT ME

I am currently a machine learning scientist at Amazon Alexa leading research within team, collaborating cross teams, and overseeing production. With 2+ years of post-doctoral academic and 2+ years of industrial experience, I am skilled in machine learning model development and performance evaluation, and proficient in Python and deep learning frameworks. My passion has always been bringing societal impact to real-world products and services with cutting-edge AI technologies.

EDUCATION

2013 – 2017 **Doctor of Philosophy**
Centre for Computational Biology
Mines ParisTech, Paris Sciences et Lettres University, Paris, France

2012 – 2013 **Master of Science**
Department of Mathematics
University of Paris XI, Orsay, France

2008 – 2012 **Bachelor of Science** (FIRST CLASS HONOURS)
Department of Mathematics
University of Science & Technology of China, Hefei, China

WORK EXPERIENCE

CURRENT, FROM NOV 2019

Machine Learning Scientist
Amazon, London/Cambridge, UK

- Key skills: Weakly Semi-Supervised Learning, Distribution Shift, Deep Generative Models, Neural Text-to-Speech
- Responsibilities at Alexa Shopping Research (Mar 2021 - Now): **1)** Tech lead to propose, drive, and deliver the research and development in privacy-preserving, bias-mitigating, and fairness-critical technologies for Alexa Shopping. **2)** Cross-team collaboration and support to ensure that engineers can successfully translate proof-of-concept to minimum-viable-product. **3)** Supervision of research internships.
- Responsibilities at Alexa Text-to-Speech Research (Nov 2019 - Feb 2021): **1)** Core contribution owning the proposal and delivery of a one-size-fits-all neural vocoding technology for speech synthesis. **2)** Support to scaling up production of text-to-speech systems in launching new voices across different region/language/gender/style.

NOV 2017 – OCT 2019

Postdoctoral Research Scientist
University of Oxford, Oxford, UK

- Key skills: Multi-View Learning, Gaussian Processes, Longitudinal Study, Multi-Omics Integration
- Responsibilities: **1)** Oxford-lead of a multi-organisational project (UK and Switzerland) in multi-omics data integration and longitudinal modelling for complex chronic disease progression. **2)** Supervision of Master thesis.

JAN 2019

Teaching Assistant
African Institute for Mathematical Sciences, Kigali, Rwanda

- Teaching tutorials and practical sessions of the master-level course "Kernel Methods in Machine Learning" at African Masters of Machine Intelligence, with Prof. Jean-Philippe Vert.

SEP 2013 – SEP 2017

Doctoral Student
Mines ParisTech & Institut Curie, Paris, France

- Key skills: Kernel Methods, Representation Learning, Learning on Graphs, Structured Sparsity
- Machine learning research: **1)** Representation learning of (incomplete) ranking data with kernel methods and social choice theory. **2)** Graph signal processing and graph-constrained sparsity regularisation.
- Computational Biology research: **1)** Improved and robust molecular prognosis of breast cancer. **2)** Interpretable biomarker discovery guided by biological networks.

■ Thesis deliverables: **1)** Several high-impact publications in top machine learning conferences and journals. **2)** An open-source toolkit written in R/C++ for analysing ranking data with kernel methods.

APR 2015 – JUN 2015

Data Scientist Intern
Roche Diagnostics GmbH, Penzberg, Germany

■ Proposed a feature engineering pipeline for processing large-scale unstructured machinery performance data, in order to model and predict failure state for automated immunoassay analysers.

SELECTED PUBLICATIONS

F Liu, **Y Jiao**, J Massiah, E Yilmaz, S Havrylov. Trans-Encoder: Unsupervised Sentence-Pair Modelling Through Self- and Mutual-Distillations. *ICLR*, 2022.

Y Jiao, A Gabryś, G Tinchev, B Putrycz, D Korzekwa, V Klimkov. Universal Neural Vocoding with Parallel WaveNet. *ICASSP*, 2021.

F Heinemann, S Kobel, S Dahlmanns, JP Vert, **Y Jiao**. Failure State Prediction for Automated Analyzers for Analyzing a Biological Sample. *US Patent App. 16/416,844*, 2019.

Y Jiao, JP Vert. The Weighted Kendall and High-order Kernels for Permutations. *ICML*, 2018.

Y Jiao, A Korba, E Sibony. Controlling the Distance to a Kemeny Consensus without Computing It. *ICML*, 2016.

Y Jiao, JP Vert. The Kendall and Mallows Kernels for Permutations. *ICML*, 2015 & *IEEE TPAMI*, 2018.

DISTINCTIONS

2013 – 2016 **Early Stage Researcher Fellowship**
in Machine Learning for Personalised Medicine funded by the EU 7th Framework Programme

NOV 2013 **Runner-up** (team collaboration)
in DREAM 8 Toxicogenetics Challenge

AUG 2011 **Honorable Mention** (top 15 nationwide)
in S.-T. Yau College Student Mathematics Contest – Probability and Statistics Sector

TECHNICAL SKILLS

PROGRAMMING	Python (numpy, pandas, sklearn), Deep Learning Frameworks (PyTorch, MXNet), R, C/C++
BIG DATA	Parallel Computing (CUDA, SGE), SQL
DEVOPS	Bash, Git, Open Source, Unit Testing, Continuous Integration
MACHINE LEARNING	Weakly Semi-Supervised Learning, Deep Generative Models, Neural Text-to-Speech, Kernel Methods, Gaussian Processes, Learning on Graphs, Computational Biology

SOFT SKILLS

COMMUNICATION	Talks at international conferences and workshops. Project presentation to peers, leadership, and stakeholders. Mentoring industrial research internships and master thesis.
WRITING	Independent writer of academic papers, as well as supervision of early-stage researcher in writing. Lead of industrial R&D proposals and technical reports on project milestone deliveries.
PROJECT MANAGEMENT	Tech lead of team projects and contributor to cross-team collaboration. Familiar with the principles of agile development, acting as a scrum master to keep project on track.
LANGUAGES	Chinese (native), English (proficient), French (conversational), Spanish (learning)