Yunlong Jiao

Machine Learning Scientist

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ABOUT ME

I am a machine learning scientist at Amazon, working on representation learning and deep generative models with large-scale complex data for Alexa AI.

EDUCATION

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

2012 – 2013 **Master of Science** (HIGHEST MENTION)
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

PROFESSIONAL SKILLS

PROGRAMMING Python (MXNet, PyTorch), R, C++, Bash

BIG DATA Parallel Computing (CUDA, SGE), SQL

ML Deep Generative Models (Flows, VAEs),
Semi-Supervised Learning, Weak Supervision,
NLP, Neural Text-to-Speech,
Kernel Methods (Gaussian Processes),
Time Series, Massively Missing Data,
Computational Biology

LANGUAGES Chinese (native), English (proficient),
French (conversational), Spanish (learning)

SELECTED PUBLICATIONS

CONFERENCES **ICASSP** 2021 ⬀

ICML 2018 ⬀ / 2016 ⬀ / 2015 ⬀

JOURNALS **IEEE TPAMI** 2018 ⬀

PATENTS **US16/416844** ⬀

Full publication list on Google Scholar ⬀

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

WORK EXPERIENCE

CURRENT, FROM NOV 2019

Machine Learning Scientist
Amazon, London/Cambridge, UK

■ (Mar 2021 - Now) Machine learning and NLP research: **1)** Methods of using ML to assist human annotators in data labeling (weak supervision and semi-supervised learning). **2)** Theories, methods, and studies to characterize, detect, or mitigate data bias.
■ (Nov 2019 - Feb 2021) Deep learning research with applications in Neural Text-to-Speech (TTS): **1)** Natural long-form speech synthesis and Conversational AI with Alexa. **2)** Delivery of universal neural vocoding technology for massively scaling up production of TTS systems.

NOV 2017 – OCT 2019

Postdoctoral Research Scientist
University of Oxford, Oxford, UK

■ Machine learning research: **1)** Scalable multi-view learning with massively and structurally missing data. **2)** Collaborative filtering-based comorbidity inference for healthcare AI.
■ Biostatistics research: **1)** Trajectory analysis for complex chronic disease progression. **2)** Longitudinal and multi-dimensional omic data integration.
■ Supervision of Master thesis.

SEP 2013 – SEP 2017

Doctoral Researcher
Mines ParisTech & Institut Curie, Paris, France

■ PhD advised by Prof. Jean-Philippe Vert.
■ Machine learning research: **1)** Representation learning of (incomplete) ranking data with kernel methods and social choice theory. **2)** Graph signal processing and network-guided community detection.
■ Bioinformatics research: **1)** Improved molecular prognosis of breast cancer. **2)** Robust biomarker discovery guided by biological networks.
■ Thesis deliverables: **1)** Several high-impact publications in top machine learning conferences. **2)** A toolkit written in R/C++ for analysing ranking data with kernel methods.

MAR 2016 – JUN 2016

Visiting Scientist
Centro de Investigación Príncipe Felipe, Valencia, Spain

■ Bioinformatics project: **1)** Interpretable feature selection for improved breast cancer survival prediction. **2)** Network analysis of signalling pathway activities.

APR 2015 – JUN 2015

Data Scientist Intern
Roche Diagnostics GmbH, Penzberg, Germany

■ Data science project: **1)** Feature engineering from large-scale unstructured machinery performance data. **2)** Failure state prediction and preventive maintenance for automated analysers.
■ US patent application filed in September 2019.