Kai Sheng Tai

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Research Interests

Learning with limited labeled data, semi-supervised learning, incorporating prior knowledge in neural network architectures, sketching algorithms, representation learning

Education

2021 Ph.D. in Computer Science, Stanford University
Thesis: *Statistical Machine Learning Under Resource Constraints*
Advisors: Peter Bailis and Gregory Valiant

2015 M.S. in Computer Science, Stanford University

2013 A.B. in Physics, *magna cum laude*, Princeton University
Thesis: *Detecting Gravitational Waves from Highly Eccentric Compact Binaries*
Advisors: Frans Pretorius and Sean McWilliams

Professional Experience

2021–	Research Scientist, Meta AI
2016–2021	Graduate Research Assistant, Stanford University
2015–2016	Senior Data Scientist, MetaMind (acquired by Salesforce in April 2016)
2014–2015	Research Assistant, Natural Language Processing Group, Stanford University
2014	Software Engineering Intern, Language Technology, Facebook
2013	Software Engineering Intern, Ads Integrity, Facebook
2012	Software Development Engineer Intern, Microsoft

Publications

Kai Sheng Tai, Peter Bailis, and Gregory Valiant. Sinkhorn Label Allocation: Semi-Supervised Classification via Annealed Self-Training. ICML, 2021.

Weiqiang Zhu*, **Kai Sheng Tai***, S. Mostafa Mousavi, Peter Bailis, and Gregory C. Beroza. An End-to-End Earthquake Monitoring Method for Joint Earthquake Detection and Association using Deep Learning. *NeurIPS Workshop on AI for Earth Sciences*, 2020. (*equal contribution)

Kai Sheng Tai, Peter Bailis, and Gregory Valiant. Equivariant Transformer Networks. ICML, 2019.

Vatsal Sharan*, **Kai Sheng Tai***, Peter Bailis, and Gregory Valiant. Compressed Factorization: Fast and Accurate Low-Rank Factorization of Compressively-Sensed Data. ICML, 2019. (*equal contribution)

Edward Gan, Jialin Ding, **Kai Sheng Tai**, Vatsal Sharan, and Peter Bailis. Moment-Based Quantile Sketches for Efficient High Cardinality Aggregation Queries. VLDB, 2018.

Kai Sheng Tai, Vatsal Sharan, Peter Bailis, and Gregory Valiant. Sketching Linear Classifiers over Data Streams. SIGMOD, 2018.

Kai Sheng Tai, Richard Socher, and Christopher D. Manning. Improved Semantic Representations from Tree-Structured Long Short-Term Memory Networks. ACL, 2015.

Kai Sheng Tai, Sean T. McWilliams, and Frans Pretorius. Detecting Gravitational Waves from Highly Eccentric Compact Binaries. *Physical Review D*, 2014.

Service

Reviewer for ICML (2019, 2020, 2021, 2022), NeurIPS (2019, 2020), JMLR (2020).

Skills

Proficient in Python, C, C++, Java. Proficient with PyTorch.