Sifei Luan

EDUCATION

University of California, Berkeley — Berkeley, CA
Ph.D. in Computer Science — 2020 – 2024
Research topics: AI & ML systems, distributed data processing systems, cloud computing

The Univerity of Chicago — Chicago, IL
B.S. in Computer Science and B.A. in Statistics — 2013 – 2017

HONORS & AWARDS

CloudSort World Record — 2022
The Sort Benchmark Committee
A foundational big data benchmark. The most cost-efficient way to sort 100 TB of data a public cloud [1, 2].

IEEE Software Magazine Best Paper Award — 2021
IEEE Computer Society
Awarded to the article "AI in Software Engineering at Facebook" [5].

ACM SIGPLAN Distinguished Paper Award — 2019
The ACM Special Interest Group on Programming Languages
Awarded to the paper "Aroma: Code Recommendation via Structural Code Search" [8].

Champion of the Midwest Trading Competition — 2016
The University of Chicago
Developed the best-performing automated trading algorithms for three securities markets.

Regional Finalist of the ACM International Collegiate Programming Contest — 2014
Association for Computing Machinery
Mid-central USA Regional Contest Finalist.

EXPERIENCE

Wayo — San Francisco, CA
Co-founder & CTO — 2023 – 2024
- Created an AI-powered global product sourcing company and raised $2M in venture capital funding.
- Built and led a team of 10 engineers, designers and product managers to launch a marketplace with $1M+ GMV.

Anyscale — San Francisco, CA
Software Engineering Intern — 2021
- Integrated Exoshuffle, a research system, into Ray Data, an open-source data processing framework for ML.

Facebook — Menlo Park, CA
Software Engineer — 2017 – 2019
- Created ML-based software engineering tools for natural language code search, code recommendation, code completion, code synthesis, code review, and automatic bug fixing.
- Deployed these tools on codebases of 10B+ LOC, improving the productivity of 50K+ engineers.
- Published 3 academic papers and presented at top-tier academic conferences for software engineering.

Facebook — Menlo Park, CA
Software Engineering Intern — 2016
- Implemented several new features in the Facebook Pages SMB Platform, totaling 20K+ LOC.

SketchMe — Menlo Park, CA
Co-founder & CTO — 2014 – 2015
- Created a social app company and raised $1.5M in venture capital funding.
- Built a team of 5 engineers and designers to launch a mobile app with 10K+ users.

Publications

[1] Frank Sifei Luan, Stephanie Wang, Samyukta Yagati, Sean Kim, Kenneth Lien, Isaac Ong, Tony Hong, SangBin Cho, Eric Liang, and Ion Stoica. *Exoshuffle-CloudSort*. 2023. arXiv: `2301.03734 [cs.DC]`.

[2] Frank Sifei Luan, Stephanie Wang, Samyukta Yagati, Sean Kim, Kenneth Lien, Isaac Ong, Tony Hong, Sangbin Cho, Eric Liang, and Ion Stoica. "Exoshuffle: An Extensible Shuffle Architecture". In: *Proceedings of the ACM SIGCOMM 2023 Conference*. ACM SIGCOMM '23. New York, NY, USA: Association for Computing Machinery, 2023, pp. 564–577.

[3] Zongheng Yang, Zhanghao Wu, Michael Luo, Wei-Lin Chiang, Romil Bhardwaj, Woosuk Kwon, Siyuan Zhuang, Frank Sifei Luan, Gautam Mittal, Scott Shenker, and Ion Stoica. "SkyPilot: An Intercloud Broker for Sky Computing". In: *20th USENIX Symposium on Networked Systems Design and Implementation (NSDI 23)*. Boston, MA: USENIX Association, Apr. 2023, pp. 437–455.

[4] Zongheng Yang, Wei-Lin Chiang, Sifei Luan, Gautam Mittal, Michael Luo, and Ion Stoica. "Balsa: Learning a Query Optimizer Without Expert Demonstrations". In: *Proceedings of the 2022 International Conference on Management of Data*. SIGMOD '22. Philadelphia, PA, USA: Association for Computing Machinery, 2022, pp. 931–944.

[5] Johannes Bader, Sonia Seohyun Kim, Frank Sifei Luan, Satish Chandra, and Erik Meijer. "AI in Software Engineering at Facebook". In: *IEEE Software* 38.4 (2021), pp. 52–61.

[6] Stephanie Wang, Eric Liang, Edward Oakes, Ben Hindman, Frank Sifei Luan, Audrey Cheng, and Ion Stoica. "Ownership: A Distributed Futures System for Fine-Grained Tasks". In: *18th USENIX Symposium on Networked Systems Design and Implementation (NSDI 21)*. USENIX Association, 2021, pp. 671–686.

[7] Zongheng Yang, Amog Kamsetty, Sifei Luan, Eric Liang, Yan Duan, Xi Chen, and Ion Stoica. "NeuroCard: one cardinality estimator for all tables". In: *Proc. VLDB Endow.* 14.1 (2020), pp. 61–73.

[8] Sifei Luan, Di Yang, Celeste Barnaby, Koushik Sen, and Satish Chandra. "Aroma: code recommendation via structural code search". In: *Proc. ACM Program. Lang.* 3.OOPSLA (Oct. 2019).

[9] Saksham Sachdev, Hongyu Li, Sifei Luan, Seohyun Kim, Koushik Sen, and Satish Chandra. "Retrieval on source code: a neural code search". In: *Proceedings of the 2nd ACM SIGPLAN International Workshop on Machine Learning and Programming Languages*. MAPL 2018. Philadelphia, PA, USA: Association for Computing Machinery, 2018, pp. 31–41.

Invited Talks

Ray Data: Unlocking Heterogeneous Execution with the Streaming Batch Model — 2024
Paul G. Allen School of Computer Science & Engineering, University of Washington — Seattle, WA

Exoshuffle: An Extensible Shuffle Architecture — 2024
Meta — Menlo Park, CA

The Ray Dataplane: History and the CloudSort World Record — 2023
Ray Summit [video] — San Francisco, CA

Exoshuffle: Large-Scale Shuffle at the Application Level — 2022
Google — Mountain View, CA

Using ML for Code Discovery at Facebook — 2019
Curry On London (co-located with ECOOP) [video] — London, UK

Using Machine Learning for Developer Productivity — 2019
F8 Developer Conference [video] — San Jose, CA

Academic Services

Reviewer — 2024
Conference on Neural Information Processing Systems (NeurIPS)

Reviewer — 2023
Conference on Neural Information Processing Systems (NeurIPS)

Artifact Evaluation Committee 2022
The European Conference on Computer Systems (EuroSys)

Artifact Evaluation Committee 2021
Symposium on Operating Systems Principles (SOSP)

Reviewer 2021
Conference on Machine Learning and Systems (MLSys)