

# Audrey Cheng

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## EDUCATION

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UC Berkeley, Ph.D. Candidate in Computer Science Advisors: Natacha Crooks and Ion Stoica	2020 – 2026
UC Berkeley, M.S., Computer Science	2020 – 2022
Princeton University, B.S.E., Operations Research and Financial Engineering Advisor: Wyatt Lloyd	2016 – 2020

## AWARDS AND HONORS

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DRFT paper invited to VLDB Journal on “Best of VLDB 2025”	2025
SkyStore paper invited to VLDB Journal on “Best of VLDB 2025”	2025
Selected for EECS Rising Stars Workshop	2024
NSF Graduate Research Fellowship	2022
Meta PhD Research Fellowship	2022
Meta Next-Generation Data Infrastructure Research Award	2021
VLDB Best Industry Paper Award	2021
UC Berkeley Chancellor’s Fellowship	2020
UC Berkeley EECS Excellence Award	2020
Princeton Tau Beta Pi, Phi Beta Kappa, Sigma Xi	2020

## PUBLICATIONS

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### Under Submission

#### 1. AI-Driven Research for Databases

Audrey Cheng, Harald Ng, Aaron Kabcenell, Peter Bailis, Matei Zaharia, Lin Ma, Xiao Shi, Ion Stoica  
<https://arxiv.org/abs/2604.06566>  
Under submission at *VLDB '26*.

#### 2. AdaEvolve: Adaptive LLM Driven Zeroth-Order Optimization

Mert Cemri\*, Shubham Agrawal\*, Akshat Gupta, Shu Liu, Audrey Cheng, Qiuyang Mang, Ashwin Naren, Lutfi Eren Erdogan, Koushik Sen, Matei Zaharia, Alex Dimakis, Ion Stoica  
<https://arxiv.org/abs/2602.20133>  
Under submission.

#### 3. EvoX: Meta-Evolution for Automated Discovery

Shu Liu, Shubham Agarwal, Monishwaran Maheswaran, Mert Cemri, Zhifei Li, Qiuyang Mang, Ashwin Naren, Ethan Boneh, Audrey Cheng, Melissa Z. Pan, Alexander Du, Kurt Keutzer, Alexandros G. Dimakis, Koushik Sen, Matei Zaharia, Ion Stoica  
<https://arxiv.org/abs/2602.23413>  
Under submission.

#### 4. Barbarians at the Gate: How AI is Upending Systems Research

Audrey Cheng\*, Shu Liu\*, Melissa Pan\*, Zhifei Li, Bowen Wang, Alex Krentsel, Tian Xia, Mert Cemri, Jongseok Park, Shuo Yang, Jeff Chen, Aditya Desai, Jiarong Xing, Koushik Sen, Matei Zaharia, Ion Stoica  
<https://arxiv.org/pdf/2510.06189>  
Under submission.

#### 5. Dynamic Prioritization of Transactional Workloads

Audrey Cheng, Xiao Shi, Aaron Kabcenell, Peter Bailis, Natacha Crooks, Ion Stoica  
Under submission.

## Peer-Reviewed Conference Proceedings

- Fair Transaction Processing for Multi-Tenant Databases**  
Audrey Cheng, Aaron Kabcenell, Jolene Huey, Xiao Shi, Peter Bailis, Natacha Crooks, Ion Stoica  
*Proceedings of the VLDB Endowment (VLDB)* '25.  
**Invited to VLDB Journal on “Best of VLDB 2025.”**
- Optimizing LLM Queries in Relational Workloads**  
Shu Liu\*, Asim Biswal\*, Amog Kamsetty, Audrey Cheng, Xiangxi Mo, Shiyi Cao, Joseph E. Gonzalez, Ion Stoica, Matei Zaharia  
*Conference on Machine Learning and Systems (MLSys)* '25.
- SkyStore: Cost-Optimized Object Storage Across Regions and Clouds**  
Shu Liu, Xiangxi Mo, Moshik Hershcovitch, Henric Zhang, Audrey Cheng, Guy Girmonsky, Gil Vernik, Michael Factor, Tiemo Bang, Natacha Crooks, Joseph E. Gonzalez, Danny Harnik, Ion Stoica  
*Proceedings of the VLDB Endowment (VLDB)* '25.  
**Invited to VLDB Journal on “Best of VLDB 2025.”**  
**Deployed at IBM.**
- Towards Optimal Transaction Scheduling**  
Audrey Cheng, Aaron Kabcenell, Jason Chan, Xiao Shi, Peter Bailis, Natacha Crooks, Ion Stoica  
*Proceedings of the VLDB Endowment (VLDB)* '24.  
**Deploying at Meta.**
- Mammoths Are Slow: The Overlooked Transactions of Graph Data**  
Audrey Cheng, Jack Waudby, Hugo Firth, Natacha Crooks, Ion Stoica  
*Proceedings of the VLDB Endowment (VLDB)* '24.
- Take Out the TraChe: Maximizing (Tra)nsactional Ca(che) Hit Rate**  
Audrey Cheng, David Chu, Terrance Li, Jason Chan, Natacha Crooks, Joseph M. Hellerstein, Ion Stoica, Xiangyao Yu  
*USENIX Symposium on Operating Systems Design and Implementation (OSDI)* '23.  
**Meta Next-Generation Data Infrastructure Research Award.**
- TAOBench: An End-to-End Benchmark for Social Networking Workloads**  
Audrey Cheng, Xiao Shi, Aaron Kabcenell, Shilpa Lawande, Hamza Qadeer, Harrison Tin, Ryan Zhao, Peter Bailis, Mahesh Balakrishnan, Nathan Bronson, Natacha Crooks, Ion Stoica  
*Proceedings of the VLDB Endowment (VLDB)* '22.  
**Deployed at Meta, PlanetScale, and TiDB.**
- RAMP-TAO: Layering Atomic Transactions on Facebook’s Online TAO Data Store**  
Audrey Cheng, Xiao Shi, Lu Pan, Anthony Simpson, Neil Wheaton, Shilpa Lawande, Nathan Bronson, Peter Bailis, Natacha Crooks, Ion Stoica  
*Proceedings of the VLDB Endowment (VLDB)* '21.  
**Best Industry Paper Award.**  
**Deployed on Messenger, serving millions of transactions per second.**
- Ownership: A Distributed Futures System for Fine-Grained Dynamic Tasks**  
Stephanie Wang, Eric Liang, Edward Oakes, Frank Luan, Audrey Cheng, Benjamin Hindman, Ion Stoica  
*USENIX Symposium on Networked Systems Design and Implementation (NSDI)* '21.
- Gryff: Unifying Consensus and Shared Registers**  
Matthew Burke, Audrey Cheng, Wyatt Lloyd  
*USENIX Symposium on Networked Systems Design and Implementation (NSDI)* '20.

## SELECTED PRESS

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- **The Register**, “Berkeley boffins build better load balancing algo with AI,” Oct 2025.  
[https://www.theregister.com/2025/10/25/openevolve\\_ai\\_better\\_algorithms/](https://www.theregister.com/2025/10/25/openevolve_ai_better_algorithms/)
- **TLDR AI Newsletter (1.6M subscribers)**, “Automating Algorithm Discovery: A Case Study in MoE Load Balancing,” Oct 2025.  
<https://tldr.tech/ai/2025-10-24>

## TEACHING

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<b>Berkeley CS262A: Advanced Topics in Computer Systems</b> , Teaching Assistant	2025
<b>Berkeley DATA 101: Data Engineering</b> , Teaching Assistant	2022
<b>Princeton COS 226: Algorithms and Data Structures</b> , Course Assistant	2017 – 2020

## MENTORSHIP

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### PhD Students (UC Berkeley)

<b>Shubham Agarwal</b>	2025 – Present
<b>Mert Cemri</b>	2025 – Present
<b>Shu Liu</b>	2023 – Present
<b>Tyler Griggs</b>	2023 – 2025
<b>Asim Biswal</b>	2023 – 2025

### Undergraduate and Master's Students (UC Berkeley)

<b>Andrew Joe</b> , Received EECS Evergreen Undergraduate Research Award	2025
<b>Jolene Huey</b> , Now at Snowflake	2024 – 2025
<b>Darren Teh</b> (M.S.), Now at DatalogyAI	2023 – 2025
<b>Alex Cao</b> , Now M.S. at Berkeley	2023 – 2024
<b>Patrick Mendoza</b>	2023 – 2024
<b>Kelly Yeh</b> , Now M.S. at Berkeley	2023 – 2024
<b>Jason Chan</b> , Now at Ramp	2022 – 2023
<b>Akshay Ravoora</b> , Now at NVIDIA	2022 – 2023
<b>Rithvik Chuppala</b> , Now at Clodo, YC S25	2021 – 2022
<b>Terrance Li</b> , Now at Applied Intuition	2021 – 2022
<b>Hamza Qadeer</b> , Now at Roblox	2021 – 2022
<b>Harrison Tin</b> , Now at Palmier, YC S24	2021 – 2022
<b>Ryan Zhao</b> , Now M.S. at Stanford	2021 – 2022

## TALKS

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### “How AI is Disrupting Systems Research”

• KTH AI Systems Workshop <i>Stockholm, Sweden</i>	Mar 2026
• Meta Datacenter Optimization Team, <i>Menlo Park, CA</i>	Feb 2026
• UCSD DSC204A Guest Lecture, <i>Online</i>	Nov 2025
• UC Berkeley CS294-262 Guest Lecture, <i>Berkeley, CA</i>	Nov 2025
• Snowflake AI Seminar, <i>Online</i>	Oct 2025

### “Fair Transaction Processing for Multi-Tenant Databases”

• Carnegie Mellon University Database Seminar, <i>Online</i>	Oct 2025
• 51st International Conference on Very Large Data Bases (VLDB) ‘25, <i>London, UK</i>	Sep 2025
• Databricks Database Reading Group, <i>Online</i>	Jul 2025
• Microsoft Gray Systems Lab, <i>Mountain View, CA</i>	Jan 2025
• Sky Lab Summer Retreat, <i>Santa Cruz, CA</i>	May 2024
• Berkeley Database Seminar, <i>Berkeley, CA</i>	Apr 2024

### “Towards Optimal Transaction Scheduling”

• TigerBeetle DB Design Seminar, <i>Online</i>	Dec 2024
• HTAP Summit, <i>Palo Alto, CA</i>	Sep 2024
• 50th International Conference on Very Large Data Bases (VLDB) ‘24, <i>Guangzhou, China</i>	Aug 2024
• Berkeley NetSys Seminar, <i>Berkeley, CA</i>	Jan 2024
• Berkeley Database Seminar, <i>Berkeley, CA</i>	Apr 2023

### “Take Out the TraChe: Maximizing (Tra)nSACTIONAL Ca(che) Hit Rate”

• Symposium on Operating Systems Design and Implementation (OSDI) ‘23, <i>Boston, MA</i>	Jul 2023
• Berkeley Progressive Systems Seminar, <i>Berkeley, CA</i>	Mar 2023

- Sky Lab Summer Retreat, *Lake Tahoe, CA* May 2022
  
- “TAOBench: An End-to-End Benchmark for Social Networking Workloads”**
- HTAP Summit, *Palo Alto, CA* Oct 2022
- 48th International Conference on Very Large Data Bases (VLDB) ‘22, *Sydney, Australia* Sep 2022
- 15th TUC Meeting @ SIGMOD ‘22, *Online* Jun 2022
- Berkeley Database Seminar, *Berkeley, CA* Feb 2022
- Deep-Dive Talks at Facebook, *Online* Sep 2021
  
- “RAMP-TAO: Layering Atomic Transactions on Facebook’s Online TAO Data Store”**
- @Scale Conference, *Online* Apr 2023
- LinkedIn Big Data Platforms, *Online* Mar 2022
- Meta Core Data Tech Talks, *Online* Feb 2022
- 47th International Conference on Very Large Data Bases (VLDB) ‘21, *Online* Aug 2021
- Deep-Dive Talks at Facebook, *Online* Sep 2020
  
- “Gryff: Unifying Consensus and Shared Registers”**
- DB Engineering Reading Hour at Facebook, *Online* Aug 2020
  
- “Unifying Caching Objectives with Learning Relaxed Belady”**
- Deep-Dive Talks at Facebook, *Online* Aug. 2020
- Princeton Senior Thesis Oral Presentation, *Online* May. 2020
  
- “Consistency Gadgets: Bridging the Consistency Hierarchy”**
- Princeton Systems Lunch, *Princeton, NJ* Nov. 2019

## EXPERIENCE

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- Research Intern, Meta, *Online*** 2020 – Present  
Mentors: Nathan Bronson and Mahesh Balakrishnan
- Software Engineering Intern, Google, *Mountain View, CA*** 2017

## SERVICE

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- Conference on Innovative Data Systems Research (CIDR), Reviewer** 2027
- 53rd International Conference on Very Large Data Bases (VLDB), Reviewer** 2027
- ACM Transactions on Computer Systems (TOCS), Reviewer** 2025
- UC Berkeley Systems Reading Group, Organizer** 2025
- UC Berkeley Sky Seminar, Organizer** 2023 – 2024
- UC Berkeley CS Graduate Student Association, Representative** 2020 – 2022
- UC Berkeley Faculty Interview Committee, Member** 2023 – 2025
- UC Berkeley PhD Admissions Committee, Member** 2021 – 2024