Ran (Elaine) Ang

linkedin.com/in/octxmas
(+1) 217-693-9190 | ra3448@columbia.edu

EDUCATION

Columbia University, New York, NY, 09/2025 – 2030 (Expected)
Ph.D. in Computer Science
Research Interests: Database; LLM and agent infrastructure; Self-evolving systems
Relevant Courses: Natural Language Processing, Malware Analysis and Reverse Engineering

University of Illinois Urbana-Champaign, Champaign, IL 09/2017 – 12/2019
M.S. in Computer Science; Thesis: Reusing Software Tests for Configuration Testing

New York University Shanghai, Shanghai, China 09/2013 – 05/2017
B.S. in Computer Science; Inaugural Class; Study Away Program in NYC, US and London, UK

SKILLS

Programming: C/C++, Python (Advanced); Golang, Java, JavaScript (Intermediate)
Core Technologies: Spanner, PostgreSQL, Docker, MapReduce, x86 Assembly

WORK EXPERIENCE

Columbia University, New York, NY 09/2025 - Current
Assistantship, Graduate Research Assistant

- Investigating database branching techniques to optimize LLM agent training and inference workflows.
- Designed and developed micro-benchmarks to evaluate performance trade-offs of branching-capable database systems.

Google, New York, NY & Montreal, QC 03/2020 – 08/2025
Fulltime, Senior Software Engineer

- Improved reliability and reduced resource usage of Ressi, Spanner's new storage engine.
- Migrated multi-exabytes user data to Ressi without disrupting live user traffic.
- Led the deprecation of Spanner's old storage engine - SSTable, removing ~100,000 lines of code.

Google, New York, NY 05/2019 – 08/2019
Internship, Software Engineer Intern

- Designed and implemented offline benchmark for I/O performance of Spanner's new storage engine. The project motivated a later development of an offline benchmark framework used across Spanner.

University of Illinois, Champaign, IL 08/2017 – 12/2018
Assistantship, Teaching Assistant

- Designed lab assignments from scratch for CS436 Networking Labs, topics including network device configuration, cloud services, Linux kernel networking, and SDN
- Led in-class lab sections of CS241 System Programming, topics including UNIX system call, concurrency, deadlock, I/O, TCP/UDP, IPC, RPC

Google, Sunnyvale, CA 05/2018 - 08/2018
Internship, Software Engineer Intern

- Productionized a data pipeline that runs daily and stably (99% success) on Borg across the entire fleet.
- Re-wrote a data transformation pipeline using FlumeC++, increasing the processing speed by 10x.

PROJECTS

Reuse Unit Tests for Configuration Testing 10/2018 – 12/2019

- Explored feasibility of testing software configurations by reusing software unit tests, and implemented a proof-of-concept framework for testing software configurations.
- Published the research findings on *OSDI'20*.

Hobby Operating System for Raspberry Pi 03/2017 - 05/2017

- Wrote a minimal OS kernel from scratch that runs on Raspberry Pi 2 hardware
- Experienced with process scheduling and setting up physical to virtual address mapping

HONORS & AWARDS

Google Cloud Tech Impact Award, Google 2021
Teachers Ranked As Excellent, University of Illinois 2017, 2018
GHC Student Scholarship, Anita Borg Institute 2018

PUBLICATION

X. Sun, R. Cheng, J. Chen, **E. Ang,** O. Legunsen, T. Xu, "Testing Configuration Changes in Context to Prevent Production Failures", 14th USENIX Symposium on Operating System Design and Implementation (OSDI'20).

W. Zhou, J. Croft, B. Liu, **E. Ang**, M. Caesar, "Automatically Correcting Networks with NEAt", 15th USENIX Symposium on Networked Systems Design and Implementation (NSDI '18).