

Sajjad Rahnama

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[DBLP](#) | [Linkedin](#) | [Google Scholar](#)

Summary

I am a Ph.D. Candidate at UC Davis, interested in building low-level systems especially distributed platforms and everything related to infrastructure. Extremely passionate about C, C++ and problem-solving creatively. I am also interested in large scale systems and eager to learn how to build very large platforms and how they work.

Education

Ph.D. in Computer Science, University of California, Davis, CA, USA

Sep 2018 – Present

- **Advisor:** Prof, [Mohammad Sadoghi](mailto:mo.sadoghi@ucdavis.edu)(mo.sadoghi@ucdavis.edu)
- **Course Work:** Completed, **GPA 3.97**
- **Research Focus:** Distributed Fault Tolerant Protocols, BFT Consensus Algorithms, Secure Transaction Processing
- **Organizations:** Blockchain at Davis (BAD)

Bachelor of Science in Computer Engineering, Tehran Polytechnique, Tehran, Iran

Sep 2013 – Apr 2018

- **GPA:** 3.6
- **Related Courses:**
 - Principles of Database Design
 - Data Structures and Algorithms
 - Data Storage and Information Retrieval
 - Design of Algorithms
 - Artificial Intelligence
 - Foundations of Matrix and Linear Algebra

Selected Publications

- Suyash Gupta, Jelle Hellings, **Sajjad Rahnama**, Mohammad Sadoghi: Proof-of-Execution: Reaching Consensus through Fault-Tolerant Speculation. International Conference on Extending Database Technology (**EDBT 2021**)
- **Sajjad Rahnama**, Suyash Gupta, Jelle Hellings, Mohammad Sadoghi: ResilientDB: Global Scale Resilient Blockchain Fabric, Proceedings of the VLDB Endowment (**VLDB 2020**)[\[reproducibility badge\]](#)
- **Sajjad Rahnama**, Suyash Gupta, Thamir Qadah, Jelle Hellings, Mohammad Sadoghi: Scalable, Resilient and Configurable Permissioned Blockchain Fabric. Proceedings of the VLDB Endowment (**VLDB 2020**)
- **Sajjad Rahnama**, Suyash Gupta, Mohammad Sadoghi: Permissioned Blockchain Through the Looking Glass: Architectural and Implementation Lessons Learned, 2020 International Conference on Distributed Computing Systems (**ICDCS 2020**)

Awards and Activities

- ★ **Best Teaching Assistant Award 2021 UC Davis** (ECS 265, ECS 165) [\[link\]](#)
 - External Reviewer for conferences listed below:
 - VLDB 2021
 - ICDE 2020, 2021
 - SIGMOD 2021
 - CIKM 2021
 - ICDCS 2020
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Research and Projects

- **ResilientDB, A Permissioned Blockchain Fabric** Jan 2019 - Present
 - **Role:** Design, Architect, and Implementation
 - High-throughput Yielding Distributed ledger built upon scale-centric design principles to democratize and decentralize computation written in **C/C++**. [\[website\]](#)[\[source code\]](#)
 - **Design and Architect:** re-architected and re-imagined modular system design from scratch that embeds parallelism and deep pipelining at every layer to fully exploit modern hardware and cloud infrastructure globally
 - **Core BFT Protocols:** Implementing modern BFT protocols such as Zyzzyva, PBFT, Hotstuff
 - **Web Dashboard:** Admin dashboard for fabric using **React/Node JS/Nginx/Influx**
- **FoundationDB A Distributed Unbundled Transactional Key Value Store** June 2021 – September 2021
 - Building a distributed fault-tolerant key-value store
 - Working on randomized deterministic testing framework
- **L-Store: A Real-time OLTP and OLAP System** Feb 2020
 - **Role:** Design and Implementation
 - lineage-based storage architecture, a contention-free update mechanism over a columnar storage
 - Implementing L-Store in Python from the scratch as TA for Database Design Course at UC Davis

Professional Experience

- Software Engineer at Apple, Cupertino, California** June 2021 – September 2021
- **FoundationDB Group:** Working distributed database and randomized correctness testing framework
- Senior Web Developer at Papion [\[website\]](#), Tehran Iran** Feb 2015 – Sep 2018
- **Role:** System Designer and Technical Consultant, Senior Backend and Frontend Developer
 - Food and recipe social media labeled as “Sarashapz Papion” with more than a million users. (JavaScript, Angular, PHP, Docker, Laravel, MySQL, MongoDB, Influx DB, Redis, HTML5, CSS, SASS)
- Senior Web Developer at Fandogh Co., University Based Startup, Tehran, Iran** JAN 2015 – MAY 2016
- **Role:** Senior Backend and Frontend Developer
 - Under supervision and supported by Tehran Polytechnique university’s Roshd institution
 - A news platform for university organizations frontend and backend written with PHP, Laravel, Angular
 - Food Reservation system for the students, web and mobile App frontend and backend

Teaching Experience

- Teaching Assistant at University of California Davis, CA**
- ECS 265: Distributed Database Systems [Fall 2019, Fall 2020] [\[website\]](#)
 - ECS 165: Database Systems [winter 2019] [\[website\]](#)
- Teaching Assistant at Tehran Polytechnique, Tehran**
- Principles of Programming [Fall 2014]
 - Discrete Structures [Spring 2015] [By [Mehran S. Fallah](#)]

Skills

Technical Skills: Distributed Databases – Multi threaded C++ system programming – Consensus Protocols – Fault Tolerance
Programming: C/C++ – Python – Java – JavaScript – Bash – PHP
Services and Systems: Google Cloud Platform - AWS - Docker- SQL - Linux and Bash - Git - LaTeX

References

- Prof. Mohammad Sadoghi:**
- **Affiliation:** Assistant Professor in the Computer Science Department at the University of California, Davis
 - **Email:** msadoghi@ucdavis.edu
 - **Website:** msadoghi.github.io
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