

EDUCATION

- 9/2021 - Present **UNIVERSITY OF CALIFORNIA, SANTA CRUZ** Santa Cruz, CA
M.S., Computer Science and Engineering
- Cryptography & Security, Distributed Systems, Database Systems Design, Advanced Operating Systems
- 9/2016 - 7/2021 **SHARIF UNIVERSITY OF TECHNOLOGY** Tehran, Iran
B.S., Computer Science
- Data & Network Security, Distributed Systems & Blockchains, Operating Systems, Computer Networks, Parallel Programming & Architecture, Bioinformatics, Image Processing

PUBLICATIONS

- J. G Chamani, D. Papadopoulos, **M. Karbasforushan**, I. Demertzis. Dynamic Searchable Encryption with Optimal Search in the Presence of Deletions. **USENIX Security 2022**

RESEARCH & WORK EXPERIENCE

- 7/2023 - 9/2023 **NEURALINK** Fremont, CA
Intern Infrastructure Software Engineer
- Reduced surgical robot software build time by half using a pipeline to build ready-for-surgery OS images in CI using HashiCorp Packer and QEMU
 - Improved surgical robot software deploy time by 6x and manual steps by 3x using automated installation via iPXE, Casper, Subiquity, and Curtin
- 9/2021 - Present **UNIVERSITY OF CALIFORNIA, SANTA CRUZ** Santa Cruz, CA
Graduate Student Researcher & Teaching Assistant
- Graduate Student Researcher at Security Research Lab, studying applied cryptography & security
 - Teaching Assistant for CSE101 - Data Structures & Algorithms (Fall '22, Fall '23, Winter '24)
 - Teaching Assistant for CSE108 - Algorithmic Foundations of Cryptography (Winter '22, Spring '23)
 - Teaching Assistant for CSE138 - Distributed Systems (Winter '23)
- 8/2020 - 12/2020 **MAX PLANCK INSTITUTE FOR INFORMATICS** Saarbrücken, Germany
Intern Researcher
- Designed a pipeline to collect and stay current with Certificate Transparency Logs' data
- 7/2018 - 5/2021 **SOTOON (CAFEBAZAAR CLOUD)** Tehran, Iran
Data Infrastructure Engineer
- Built a platform to transfer, store, and analyze big data at petabyte scale for multiple user-facing apps with 84M+ active users across Android, iOS, and web
 - Launched and maintained highly available Apache {Druid, Kafka, Hadoop, Spark, Zeppelin, ZooKeeper} and M3DB clusters and services with high-accuracy billing systems
 - Developed Kubernetes operators to manage Apache {Kafka, Hadoop, ZooKeeper} clusters in a Platform as a Service (PaaS) environment
 - Scaled the storage cluster from 10s of terabytes to petabytes (100x)

ADDITIONAL INFORMATION

PROFESSIONAL SERVICE

- **External/Sub-reviewer:** SIGMOD 2024, CCS 2023, SIGMOD 2023, FCS (IEEE CSF) 2022

TECHNICAL SKILLS

- **Proficient in** Docker, Kubernetes, Apache {Druid, Hadoop, Kafka, Zeppelin, ZooKeeper}, HashiCorp Nomad, GoLang, Python, C++, GNU/Linux, Git, LaTeX
- **Experience with** Nix, HashiCorp {Packer, Vagrant}, QEMU, iPXE, Apache Spark, Java, Prometheus, M3DB, PostgreSQL

HONORS AND AWARDS

- Top **0.4 percentile** in 2016 Iranian nationwide university entrance exam for Mathematics & Physics (STEM)
- Top **0.2 percentile** in 2016 Iranian nationwide university entrance exam for Foreign Language Studies