**AMIN KARBAS**
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## SUMMARY

- Systems Software Engineer with 3 years of experience with on-premise and cloud-based infrastructure platforms
- Fluent in GoLang, Python, and C++; proficient in Kafka, Hadoop, Druid, Nomad, and Kubernetes
- 1 first-author manuscript under submission for publication and 1 co-author publication in a high-impact conference

## EXPERIENCE

7/2023 - 9/2023 **NEURALINK** *Intern Infrastructure Software Engineer*

- Cut surgical robot OS image build time 2x with a CI pipeline using Packer and QEMU
- Improved surgical robot software deploy time by 6x and reduced manual steps by 3x with automated installation via iPXE, Casper, Subiquity, and Curtin

9/2021 - 3/2024 **UNIVERSITY OF CALIFORNIA, SANTA CRUZ** *Graduate Student Researcher*

- Engineered Applied Cryptography research prototypes using C++, OpenSSL, and gRPC
- Organized weekly security seminars with local and invited speakers from academia and industry
- Served as a Volunteer Graduate Student Mentor in the Undergraduate Directed Reading Program

6/2018 - 6/2021 **SOTOON (CAFEBAZAAR CLOUD)** *Infrastructure Software Engineer*

- Engineered a big data platform supporting user-facing apps with 84M+ monthly active users
- Launched and maintained highly available Druid, Kafka, Hadoop, ZooKeeper, and M3DB clusters
- Implemented an initial billing system for Kafka and Hadoop clusters, achieving 95% accuracy
- Maintained a Zeppelin notebook service for interactive Spark jobs, supporting over 50 internal users
- Developed Kubernetes Operators to manage Kafka, Hadoop, and ZooKeeper clusters
- Scaled the storage infrastructure 100x, from tens of terabytes to petabytes
- Authored Kafka maintenance instructions, reducing system-ownership onboarding time by 25%
- Managed Druid and Kafka clusters as system owner, including on-call data pipeline support

## PUBLICATIONS

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

## EDUCATION

9/2021 - 3/2024 **UNIVERSITY OF CALIFORNIA, SANTA CRUZ** *M.S., Computer Science and Engineering*

- Distributed Systems, Database Systems Design, Architecture, Hardware Design, Artificial Intelligence
- Graduate Student Researcher at Security Research Lab, studying applied cryptography and security
- Teaching Assistant for Data Structures and Algorithms, Cryptography, and Distributed Systems

9/2016 - 7/2021 **SHARIF UNIVERSITY OF TECHNOLOGY** *B.S., Computer Science*

- Operating Systems, Computer Networks and Security, Parallel Programming and Architecture

## ADDITIONAL INFORMATION

### TECHNICAL SKILLS

- **Proficient in** Docker, Kubernetes, Kafka, Hadoop, Druid, Zeppelin, ZooKeeper, Nomad, GoLang, Python, C++, Bash, GNU/Linux, Git, LaTeX, Certificate Transparency and PKI
- **Experience with** Nix, Bazel, Protobuf, gRPC, Django, Redis, PostgreSQL, OOP, Spark, Scala, Prometheus, CI/CD, Ansible, Packer, Vagrant, QEMU, iPXE, NetBoot, cloud-init

### HONORS AND AWARDS

- **99.6 percentile** among 160K in Mathematics and Physics (STEM) Iranian nationwide university entrance exam, 2016; **99.8 percentile** among 109K in Foreign Language Studies

### PROFESSIONAL SERVICE

- **External Reviewer at** ASIACCS '24, ICDE '24, SIGMOD '24, CCS '23, SIGMOD '23, FCS (IEEE CSF) '22