

## MOHAMMADAMIN KARBASFORUSHAN (AMIN KARBAS)

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### RESEARCH INTERESTS

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- **Applied Cryptography and Security:** Oblivious Computing, Encrypted Databases and Systems
- **Systems:** Disaggregated Data Centers, Near-Data Computation, Distributed Databases

### EDUCATION

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- 9/2021 - Present    **UNIVERSITY OF CALIFORNIA, SANTA CRUZ**    Santa Cruz, CA  
Ph.D., Computer Science and Engineering
- Studying applied cryptography and security, advised by Prof. Ioannis Demertzis.
  - Coursework: Cryptography and Security, Distributed Systems, Database Systems Design, Advanced Operating Systems
- 9/2016 - 7/2021    **SHARIF UNIVERSITY OF TECHNOLOGY**    Tehran, Iran  
B.S., Computer Science
- Coursework: Operating Systems, Parallel Programming and Architecture, Computer Networks, Data and Network Security, Distributed Systems and Blockchains, Bioinformatics, Image Processing

### EXPERIENCE

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- 8/2020 - 12/2020    **MAX PLANCK INSTITUTE FOR INFORMATICS**    Saarbrücken, Germany  
*Research Intern*
- Collaborated with Dr. Oliver Gasser in Prof. Anja Feldmann's research group
  - Designed a pipeline to collect and stay up to date with Certificate Transparency Logs' data
- 7/2018 - 5/2021    **SOTOON (CAFEBAZAAR CLOUD)**    Tehran, Iran  
*Data Infrastructure Engineer*
- Built the 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
  - Researched and provided strategic recommendations for solution architecture including Apache Druid for OLAP and Presto for SQL on Hadoop
  - Set up and maintained Apache {Druid, Kafka, Hadoop, Spark, Zeppelin, ZooKeeper} and M3DB clusters and services; Designed health checks and high-accuracy billing systems for them
  - Scaled the storage cluster from 10s of terabytes to petabytes (100x)
  - Developed Kubernetes operators to manage Apache {Kafka, Hadoop, ZooKeeper} clusters in a Platform as a Service (PaaS) environment
  - Created mentorship documents and mentored new team members
- 2/2018 - 9/2019    **GOJESABZ BIG DATA**    Tehran, Iran  
*Machine Learning Engineer*
- Built a deep learning-based Farsi image-to-text (OCR) pipeline

### PUBLICATIONS

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

### ADDITIONAL INFORMATION

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#### PROFESSIONAL SERVICE

- **External/Sub-reviewer:** SIGMOD 2023 (cycles A/B/C), FCS 2022

#### TEACHING ASSISTANCE

- CSE101 Data Structures and Algorithms (Fall 2022)
- CSE108 Algorithmic Foundations of Cryptography (Winter 2022)

#### TECHNICAL SKILLS

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

#### HONORS AND AWARDS

- Scored **99.6 percentile** in 2016 Iranian nationwide university entrance exam for Mathematics & Physics (STEM)
- Scored **99.8 percentile** in 2016 Iranian nationwide university entrance exam for Foreign Language Studies