

# MOHAMMADAMIN KARBASFORUSHAN

mkarbasf@ucsc.edu | akarbas.github.io

## EDUCATION

---

- 9/2021 - Present **UNIVERSITY OF CALIFORNIA, SANTA CRUZ** Santa Cruz, CA  
Ph.D., Computer Science and Engineering  
  - Focus: Applied Cryptography
- 9/2016 - 7/2021 **SHARIF UNIVERSITY OF TECHNOLOGY** Tehran, Iran  
B.S., Computer Science  
  - GPA: 3.7/4.0
  - Coursework: Operating Systems, Parallel Programming and Architecture, Computer Networks, Data and Network Security, Distributed Systems and Blockchains, Bioinformatics, Image Processing
  - Voluntary member of the Sharif Green Society, advocating for environmental protection
  - Voluntary organizer of seminars in the scientific chapter of the Mathematics and Computer Science department
- 9/2012 - 6/2016 **NATIONAL ORGANIZATION FOR DEVELOPMENT OF EXCEPTIONAL TALENTS** Tehran, Iran  
Allameh Helli 5 High School  
  - GPA: 4.0/4.0
  - Diploma In Mathematics And Physics
  - Scored 99.6 percentile in 2016 nationwide university entrance exam in Mathematics & Physics
  - Scored 99.8 percentile in 2016 nationwide university entrance exam in Foreign Language Studies

## EXPERIENCE

---

- 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
  - Investigated the impact of changes in TLS certificate lifetime requirements enforced by user-agents
  - Designed a pipeline to collect and stay up to date with Certificate Transparency Logs' data
  - Analyzed 11B records from all available Certificate Transparency Logs
  - Accumulated 5 billion TLS certificates for further active measurements
  - Voluntary member of Max Planck Society Mental Health Collective
- 7/2018 - 5/2021 **SOTOON (CAFEBAZAR 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 solutions architecture including Apache Druid for OLAP and Presto for SQL on Hadoop
  - Set up and/or maintained Apache {Druid, Kafka, Hadoop, Spark, Zeppelin, ZooKeeper} and M3DB clusters/services; Designed currently running probes 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 environment
  - Created mentorship documents and mentored new team members
  - Increased team productivity and efficiency by coordinating work processes
- 2/2018 - 9/2019 **GOJESABZ BIG DATA** Tehran, Iran  
*Machine Learning Engineer*  
  - Collaborated with Dr. Shahin Rouhani and a team of students from Sharif University of Technology
  - Built a deep learning-based Farsi image-to-text (OCR) pipeline
  - Developed convolutional and long short-term memory neural networks for image classification, super-resolution, and OCR
- 7/2017 - 9/2017 **SAHAB PARDAZ** Tehran, Iran  
*Data Engineering Intern*  
  - Developed a distributed and highly available web search engine indexing millions of websites
  - Developed and maintained a document index/fetch wrapper for Elasticsearch

## SELECTED COURSE PROJECTS

---

Fall 2019	<b>Buffer Overflow, Format String, XSS, SQL Injection, and ARP Poisoning Attack Implementation</b> <i>Data and Network Security</i>
Spring 2019	<b>DHCP, UDP Hole Punching, and BGP Implementation</b> <i>Data Transfer and Computer Networks</i>
Spring 2019	<b>Gene Expression, Gene Ontology, and Pathway Analysis with R</b> <i>Introductory BioInformatics</i>
Spring 2019	<b>Blockchain/Cryptocurrency Analysis Platform</b> <i>Data Engineering</i>
Fall 2018	<b>Crowdfunding Ethereum Smart Contract</b> <i>Foundations of Blockchain Technology and Cryptocurrencies</i>
Spring 2018	<b>Checkers AI with Minimax and AlphaBeta Pruning</b> <i>Analysis of Algorithms</i>
Fall 2017	<b>CPU Design With Verilog and Quartus</b> <i>Principles of Computer Systems</i>
Fall 2017	<b>TicTacToe with AI adversary in MIPS assembly</b> <i>Principles of Computer Systems</i>

## SELECTED COURSES

---

20.0/20.0	Data Transfer and Computer Networks
20.0/20.0	Data Engineering
19.0/20.0	Advanced Programming
18.7/20.0	Principles of Computer Systems
18.5/20.0	Fundamentals of Computers and Programming
18.0/20.0	Data and Network Security
17.8/20.0	Database Systems
17.6/20.0	Introductory BioInformatics
17.2/20.0	Principles of Image Processing
16.6/20.0	Foundations of Blockchain Technology and Cryptocurrencies (Graduate Course)

## ADDITIONAL INFORMATION

---

### TEST SCORES

- **TOEFL iBT** score: 115 (Reading 30, Listening 30, Speaking 28, Writing 27)
- **GRE General Test** score: Quant 169, Verbal 155, Writing 4.0

### TECHNICAL SKILLS

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

### LANGUAGES

- Fluent in English; Native speaker of Farsi

### INTERESTS

- **Research Interests include:** Applied Cryptography, Operating Systems, Storage/File Systems, Distributed/Cloud Computing, Hardware Accelerators, Hardware-Software Co-Design, System on Chips
- **General Interests include:** Mountain Biking, Dancing, Mental Health Awareness, Gender Equality, Environmental Protection, Distributed and Scalable Software, Cloud-Native Software