Mohamed Elgharbawy

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EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY

Electrical Engineering and Computer Science M.S., GPA: 3.95 — 2023
Computer Science B.A., GPA: 3.86 — 2021

DE ANZA COLLEGE

Associates: Liberal Arts - Science, Math and Engineering Emphasis, GPA: 3.78 — 2019

SKILLS

Languages: **Advanced:** C++, Java, Python; **Intermediate**: Swift, Web Dev., C
Software & Libraries: AWS, PyTorch, TensorFlow, Pandas, SQL, DynamoDB, Apache, PhpMyAdmin, Google Guice
Skills: Machine Learning, Optimization, Database Systems, Software Development and Ownership

WORK EXPERIENCE

Amazon — Bellevue, WA
Software Development Engineer Intern — Summer 2020, 2021, 2022

- Designed and implemented both full stack and backend services from scratch
- Designed and implemented a pre-compute solution to reduce loading times from 10+ seconds to under a second
- Implemented integration testing, metrics, dashboards, alarms, and conducted an Operational Readiness Review

AI Health — Sunnyvale, CA
Computer Science Intern — July 2018 - December 2018

- Developed an anti-fraud software for dental offices
- Worked with databases containing millions of entries
- Reduced CSV manipulation scripts' runtimes significantly

RESEARCH

Machine Learning for Combinatorial Optimization - RISELab @ UC Berkeley — Berkeley, CA
Graduate/Undergraduate Student Researcher — September 2021 - May 2023

- Researched machine learning methods to improve the performance of Optimization Modulo Theory Solvers, such as Z3. Research methods involved using graph convolutional networks and contrastive learning.
- Thesis: Contrastive Learning for Combinatorial Optimization (https://www2.eecs.berkeley.edu/Pubs/TechRpts/2023/EECS-2023-140.html)

NumS - RISELab @ UC Berkeley — Berkeley, CA
Undergraduate Student Researcher — January 2021 - May 2021

- Increased the API Coverage and improved the testing suite for NumS (github.com/nums-project/nums), a numerical computing library for Python that scales to the cloud

TEACHING

Computer Science Mentors (CS61A) - UC Berkeley — Berkeley, CA
Junior Mentor — September 2021 - December 2021
CS61C - UC Berkeley — Berkeley, CA
Academic Intern — January 2021 - May 2021
CIS 36A - De Anza College — Cupertino, CA
Computer Science Teaching Assistant — January 2019 - March 2019