

# Mohamed Elgharbawy

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## EDUCATION

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### UNIVERSITY OF CALIFORNIA, BERKELEY

Electrical Engineering and Computer Science M.S. 2023  
Computer Science B.A. 2021

### DE ANZA COLLEGE

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

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## SKILLS

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**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

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## WORK EXPERIENCE

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### Amazon

*Software Development Engineer Intern*

Remote/Bellevue, WA  
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

*Computer Science Intern*

Sunnyvale, CA  
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

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## RESEARCH

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### Machine Learning for Combinatorial Optimization - RISELab @ UC Berkeley

*Research Assistant*

Berkeley, CA  
September 2021 - Present

- Researched machine learning methods to improve the performance of Optimization Modulo Theory Solvers, such as Z3. Current research involves using graph convolutional networks and contrastive learning.

### NumS - RISELab @ UC Berkeley

*Research Assistant*

Berkeley, CA  
January 2021 - May 2021

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

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## TEACHING

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### Computer Science Mentors (CS61A) - UC Berkeley

*Junior Mentor*

Berkeley, CA  
September 2021 - December 2021

### CS61C - UC Berkeley

*Academic Intern*

Berkeley, CA  
January 2021 - May 2021

### CIS 36A - De Anza College

*Computer Science Teaching Assistant*

Cupertino, CA  
January 2019 - March 2019