

Derek Qin

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EDUCATION

California Institute of Technology, Pasadena, California

Sept 2020 - June 2024

- B.S. Major: Computer Science, Minor: Information and Data Sciences; **GPA:** 4.1/4.0
- **Selected Coursework:** **CS:** Data Structures, Software Development, Functional Programming, Computing Systems, Algorithms, Relational Databases, Data Mining, Learning Systems, Computer Vision; **Math:** Discrete Math, Linear Algebra, Statistics, Probability Models, Statistical Inference, Bayesian Statistics

SKILLS

- **Programming Languages:** Python, C, C++, Java, SQL, Rust, JavaScript/TypeScript, MATLAB
- **Tools:** Git, Mercurial, Docker, AWS, FEniCS
- **Development:** HTML/CSS, React, Angular, Express.js, Node.js, RxJS, Django
- **Machine Learning:** PyTorch, TensorFlow, Keras, scikit-learn, Numpy, pandas, Jupyter Notebooks

EXPERIENCE

Google

Kirkland, WA

Software Engineer Intern

Summer 2022

- Created API to poll GCP Cloud Monitoring for global DNS usage by VM instances
- Added UI to Compute Engine front-end with informative design for smooth DNS migration and optimized for page load performance using asynchronous route resolvers and deferred loading

San Capital Management

Remote

Software Engineer Intern

Winter 2022 - Present

- Built performant blockchain transaction parser and market making platform for early stage trading startup

Caltech Tensor Lab

Pasadena, CA

Machine Learning Research Intern

Winter 2021 - Present

- Improved Fourier Neural Operator performance on PDEs with nonperiodic boundary conditions by up to 15% by designing a Fourier Continuation-based deep neural network, deployed using AWS

PROJECTS

Phantom Traffic Jam Alleviation Using Networked Autonomous Cars

Python

- Designed and implemented autonomous vehicle control system that decreases phantom traffic jam duration by 12.2% and increases vehicle flow rate by 18%

LEADERSHIP AND TEACHING

Caltech CS 38/138 Algorithms

Pasadena, CA

Teaching Assistant

Spring 2022

Association for Young Scientists and Innovators

Plano, Texas

Vice President, Co-founder, Advisory Board

May 2019 - Present

- Co-founded and led a 501(c)(3) nonprofit to mentor students in scientific research with over 400 members
- Organized inaugural AYSI Summer Coding Institute, which taught over 300 middle and high school students essential skills in MIT App Inventor and Machine Learning

SELECTED AWARDS

- USA Physics Olympiad, Medalist (National Top 200 Individuals)
- 5x American Invitational Mathematics Exam (AIME) Qualifier
- 8x American Mathematics Competition (AMC 10/12) Distinguished Honor Roll