

# David Chen

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## Education

### Harvey Mudd College

Claremont, CA

B.S. in Computer Science and Mathematics (GPA: 3.99), Dean's List, Harvey S. Mudd Merit Scholar

Aug 2021 - May 2025

Coursework: Data Structures, Algorithms, Software Engineering, Machine Learning (graduate), Computer Systems, Operating Systems, Databases, Big Data, Computability, Programming Languages, Operations Research, Abstract Algebra, Discrete, Econometrics

Activities: HMC Data Science Co-President, Student Mentor, Asian Pacific Islander Mentor, CS Grader/Tutor, Badminton Club

### Princeton High School

Princeton, NJ

GPA: 4.0/4.0 (4.7/5 weighted), National Merit, National AP Scholar, Captain of Math Team and Algorithms Club

Sep 2017 - June 2021

Independent Study (Stanford graduate courses): Artificial Intelligence, Computer Vision, Natural Language Processing, Deep Learning

## Work Experience

### Databricks

San Francisco, CA

SOFTWARE ENGINEER INTERN - DATABASE INFRA

May 2024 - Aug 2024

- Developed online primary/replica table checksumming to pre/post-validate 768 Azure MySQL Single Server to Flex Migrations
- Leveraged Temporal workflows to orchestrate durable execution, async retries, transaction timeouts, and database stress watchdogs
- Built and benchmarked maximally efficient multithreaded checksumming with 2x validation speed and reduced database blocks
- Designed production workflow with restored primary and cascading database replication to minimize production impact
- Created versatile sysbench synthetic data traffic generation script used across team to estimate database impact and test designs

### Stripe

South San Francisco, CA

SOFTWARE ENGINEER INTERN - SERVICE FRAMEWORKS

May 2023 - Aug 2023

- Improved cross-language gRPC support across Ruby and Java by bringing consistency and feature parity to backend infrastructure
- Designed streamlined Ruby/Java error parsers for robustly handling and decoding gRPC exceptions, migrated 40+ existing cases
- Replaced manual creation of Ruby gRPC clients for Java services by writing Bazel rules to autogenerate Java gRPC clients in Scala
- Developed highly-demanded company-wide Slack command to simplify giving kudos to multiple recipients

### Google

Pittsburgh, PA

STEP INTERN - CLOUD AI AND INDUSTRY SOLUTIONS

May 2022 - Aug 2022

- Created a JupyterLab Notebooks extension with React to integrate Vertex AI Pipelines
- Led design and implementation of UI support to create and interact with pipelines, simplifying workflow and minimizing boilerplate
- Maintained UX design and code consistency with existing JupyterLabs extensions, refactoring shared functionality and tests
- Researched potential methods for pipeline visualization, exploring open source alternatives and documenting limitations

### Scout AI (backed by Y Combinator)

Mountain View, CA

SOFTWARE ENGINEER INTERN

May 2021 - Aug 2021

- Designed and built live restaurant-facing promotion iOS app with Swift/Firebase, created demos for pitch deck
- Set up database to sync with consumer app, emulated and deployed Node.js Cloud Functions for notifications and data cleaning

## Academic Experience

### Internhub

Claremont, CA

FOUNDING ENGINEER

Aug 2024 - May 2025

- Conducted and analyzed 50+ interviews, solidified idea for all-in-one, integrated internship platform for students and career services
- Designed, built, and gathered feedback on alumni finder and Leetcode tracker modules, pitched to career service offices and investors

### ALPAQA Lab - Lucas Bang

Claremont, CA

STUDENT RESEARCHER - PATH COMPLEXITY

Aug 2022 - Dec 2023

- Developed improved code complexity metrics for predicting symbolic execution path explosion, published/presented at FormalISE
- Designed, tested, and implemented extension from recursion to inter-procedural calls, identified and fixed major computational bug

### Microfluidics and Biomaterials Lab - Steven Santana

Claremont, CA

DATA VISUALIZATION AND WEB DEVELOPMENT

Sep 2021 - May 2022

- Created visualizations for critical reflection on the engineering design process to promote non-linear design and diverse team culture
- Built personalized web dashboard for individual and team self-reflection, automatically integrating plots from Python and R

### Backgammon - Arthur Benjamin

Claremont, CA

SUNDEMAN RESEARCH ASSISTANT

Mar 2022 - May 2022

- Developed website for rapid iteration regression testing to create optimal, memorable backgammon strategies based on game state

## Projects and Awards

**Citadel - Data Open Championship (2021-2022):** 1st Place Globals (\$100,000 prize), 1st Place West Coast (\$10,000 prize)

**ICPC North American Championship 2024:** Qualified, Top 50 National

**Ruzzle Solver:** Designed first mobile-only Python program to automate a word finding game with OCR, graph theory, and prefix tries

**Reddit Username Generator:** Trained LSTM/GRU models on 400k usernames for text generation, integrated into React through TF.js

**Arduino & RasPi Self-Driving Car:** Built obstacle avoiding robot, tuned ROS models in Gazebo sim to speed up maze navigation by 37%

## Skills

**Languages:** Fluent in Python, TypeScript, JavaScript; Familiar with Java, Scala, C, C++, Ruby, Swift, SQL, Haskell

**Technologies:** MySQL, React, Next.js, MongoDB, Temporal, Firebase, Bazel, Dagger, Flask, Node.js, Pandas, Azure, GCP, AWS