

ETHAN CHENG

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EDUCATION

Duke University

M.S. Computer Science

• Cumulative GPA: **3.83**

• Coursework: Computer Security, AI Security and Privacy, NLP, Reinforcement Learning, Cryptography, IoT, App Development

Durham, NC

Expected 2027

University of California Santa Cruz

B.S. Computer Science

• Cumulative GPA: **3.9/4.0**; SAT score **1560/1600**

• Coursework: Data Structures and Algorithms, Computer System and Assembly Language, Programming in Data Science and AI, Computer System Design, Web Applications, Machine Learning, Distributed Systems, Networking and Internet

Santa Cruz, CA

April 2025

PROJECTS

Gender/Racial Bias in Facial Classification Research

- Created and curated a facial dataset incorporating gender and race features using NumPy and Pandas
- Analyzed the impact of model architecture and dataset composition on bias in gender classification across racial groups
- Trained and evaluated multiple CNN architectures using PyTorch-based pipelines, identified factors contributing to misclassification, and implemented techniques such as Mixture of Experts and ensemble methods to reduce classification bias

Network Security Lab: Penetration Testing and Packet Filtering

- Conducted network reconnaissance and penetration testing on a mock network using Nmap to assess vulnerabilities
- Developed and implemented packet-filtering rules for an interior router on a screened subnet, analyzing benign and malicious traffic in Wireshark to prevent data leakage and restrict access to sensitive files

Distributed Key-Value Store

- Designed and deployed a multi-node, RESTful distributed key-value store using Docker and Python Flask, implementing strong, eventual, and causal consistency models with sharding for scalability
- Simulated network and node failures to test system reliability and consistency through extensive read, write, and delete operations under varying fault conditions

Event Suggestion/Scheduling App

- Collaborated in a team of four to develop a React Native app using TypeScript, Node.js, and Expo Go, integrating Ticketmaster and Duke's Event APIs to curate personalized event recommendations based on user preferences, location, and calendar availability
- Utilized Expo Router for structured navigation and npm for dependency management, implementing interactive map and list views for event exploration and enabling calendar synchronization to streamline event scheduling and management

Diabetes Prediction using Clinical Data

- Analyzed clinical datasets to predict diabetic, prediabetic, and non-diabetic status using machine learning models
- Performed data cleaning, normalization, and feature selection through correlation and feature importance analysis
- Built and compared linear regression and decision tree classifiers using pandas, NumPy, and scikit-learn to assess performance and interpret key predictive factors; evaluated models using confusion matrices and F1 scores

LEADERSHIP/TEACHING EXPERIENCE

Skit Committee Chair

UCSC Chinese Student Association

- Directed and organized the production of a short cultural film to be played at the association's annual lunar new year festival

Santa Cruz, CA

December 2021 - February 2022

Front Ensemble Band Instructor

Foothill High School Marching Band

- Led 15 students during week long, intensive band camp training and instructed new members in development of basic mallet skills

Pleasanton, CA

August 2021 - September 2021

Abacus Teaching Assistant

Yellow River Chinese School

- Developed lesson plans and hosted weekly classes on various abacus operations and techniques; focused on small pod discussions

Fremont, CA

September 2017 - November 2019

SKILLS & INTERESTS

Software: advanced [Javascript, C, C++, Python (pandas, matplotlib, pytorch, flask), SQL, React Native]; beginner [Java, assembly]; Microsoft/Google Suite; Docker

Soft Skills: communication, teamwork, organization, patience