

EDUCATION

University of California, Berkeley

Bachelor of Art, Computer Science

2016-2020

Master of Science, Computer Science

2020-2021

SKILLS

Programming Languages

CPython, Java, HTML/CSS, Javascript, Markdown, SQL, C#, C, C++

Libraries

OpenMP, MPI, CUDA, OpenGL, Numpy, Pandas, Matplotlib, PyTorch, Bokeh

Web App Frameworks

Django, Ruby on Rails, Jekyll, Flask

Software & Tools

MS Office, LaTeX, G Suite, Adobe Illustrator, Unity

Software Development

Design, PoC & Functional spec, Docker, Agile / Scrum, Test Automation
Bash, Git / SVN

WORK EXPERIENCE

Amazon, Seattle

August 2021-September 2023

Software Development Engineer

- Worked as a backend software developer in a team responsible for the Campaign Management Platform in Amazon Advertising group. Expert-level experience on big data system, API design, AWS services - DynamoDB, Cloudwatch, SWF, CloudFormation, Lambda. Passionate about building and maintaining highly scalable complex and distributed data-driven systems and services.
- Designed and developed an error detection and recovery mechanism using CloudFormation and Lambda to redrive failed requests from DynamoDB to PostgreSQL during real-time data synchronization. This mechanism ensures Ad-Campaign data is available to clients and advertisers, and is highly resilient.
- Designed and developed an automation tool for Service Outlier Analysis that resulted in more than 20x speedup in Developer response time, ensuring a more robust Amazon Ads Campaign Management service availability and mitigation of business critical issues.
- Designed and developed a data-driven metric generator which automatically detects and alarms on Campaigns that failed validation workflow. This helps to achieve high Campaign Creation API availability and successful rates.
- Worked with multiple client development teams on a large scale code migration to the latest Campaign Management backend. As buddy support for the client teams, my roles were to discuss with and guide them, and review their codes and pull requests.
- Experience with Amazon oncall and software development process, such as pipeline deployments, code reviews, Agile workflow, DevOps.

Cadence Design Systems, San Jose

May 2021-August 2021

Research Intern

- Researching Bayesian Optimization and its applications in electrical-magnetic modeling.
- Devised novel ways to research and apply similar algorithms and techniques in IC design automation software and flows.
- Design and implement software with modern programming and artificial intelligence packages such as PyTorch and Scikit-Learn.

Freddie Mac, McLean

May 2019-August 2019

Financial Engineering Intern

- On-site internship under this government-sponsored enterprise.
- Project 1: Developed data visualizations (Heatmaps, Bar charts, 3D) using Python libraries Bokeh and Pandas. The visualization system is used for housing loan risk analysis where feature recognition and correlation analysis are essential part of the algorithms and model development.
- Project 2: Developed a Django web application that hosts the visuals of the data models. The web application is designed for direct and interactive access to the data by the users. The visualization is configurable by customizing axes and Django caching is deployed for high performance.

ACADEMIC PROJECTS

GamesCrafters

2018-2021

GamesmanPuzzles, Project Lead

- Created the GamesmanPuzzles Project, a simple Python interface to solve abstract Puzzle problems with high performance. Developed under the mentorship of Professor Dan Garcia.
- Taught a group of undergraduates the principles of software engineering.
- Extended Python with C and explored with multiple optimization techniques (i.e. HashTables, MapReduce) to achieve high performance.
- Showcases the results using a Web API through Flask.

Member

- Member of a group devoted to perfectly solving two-player games aka combinatorial and computational game theory.
- Helped implement the Universal Web API to combine game solutions from the multiple GamesCrafters backends (ie GamesmanJava, GamesmanClassic). Specifically, worked on translating chess solutions from the Syzygy endgame tablebases from its public API.
- Researched using Decision Trees as a way of compressing key-value pairs into a series of feature decisions (i.e. number of pieces on the board, whether the second piece is an "X" or an "O").

Actor Migration for Ray

2020

Graduate Class Project

- Worked on adding an Actor migration feature for the Ray Python package, the simple, universal API for building distributed applications.
- Goal was to increase utilization of resources by moving stateful Actors in Nodes that are not sufficiently utilized and placing them together to increase utilization. Requires migrating state, objects and object relationships.
- Worked on Reference Table (Ownership) migration and Benchmarking.

DataBears, Berkeley

2019

Content Creator/TA

- Developed content for the SQLite lecture, which included a Jupyter Notebook lab, a Gradescope autograder environment, and a Introduction to Databases presentation.
- Content covered relational database, DMS, SQL queries and Pandas interactions.

TEACHING EXPERIENCE

Education Enrichment Center, Pleasanton

June 2018-August 2018

Math Teacher/SAT Content Creator

- Responsible for teaching adolescents math in preparation for the school year as well as developed a curriculum for SAT practice.

Dept. of Computer Science, UC Berkeley

2017-2021

Tutor

- CS 61A: Structure and Interpretation of Computer Programs, CS 61B: Data Structures

GSI

- CS 61C: Great Ideas in Computer Architecture

EXTRA-CURRICULAR

Programmer/Artist in the Game Design Club in 2019.

Publicity Chair of the Berkeley Unit 4 Hall Association in 2016-2017.

President of the Amador Valley Game Design Club in 2016.

Volunteered at a Valley Humane Society from 2012-2016.

Member of Amador Valley Swim Team from 2014-2016

REFERENCES

Suomin Cui: <https://www.linkedin.com/in/suomin-cui-2703086>
James Naslund: <https://www.linkedin.com/in/jim-naslund-4031093/>
Mason Chow: <https://www.linkedin.com/in/mason-chow-3502a89a/>
Dan Garcia: <https://people.eecs.berkeley.edu/~ddgarcia/>

MISCELLANEOUS

US Citizen