ANTHONY LING

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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	Test Automation, Docker, Bash Scripting, Git / SVN, Agile / Scrum

WORK EXPERIENCE

Amazon, Seattle August 2021-

Software Development Engineer

- Worked as a Backend engineer for the Campaign Management Platform for Amazon Advertising (Performance Advertising). Expert-level experience with AWS services (DynamoDB, Cloudwatch, SWF, CloudFormation, Lambda).
- Designed and developed an Error detection and recovery mechanism using CloudFormation and Lambda to redrive failed requests from DynamoDB to PostgresSQL for database synchronization. The databases are used to store Advertising Campaign entities.
- Designed and developed an automation tool to fetch availability dips from metrics, fetch related logs, and generate Service Availability reports using Principal Component Analysis.
- Designed and developed a metric generator to alarm on Campaigns that failed validation workflow, resulting in better response to failures.
- Worked on large scale codebase migration to another Campaign Management backend. Collaborated with multiple clients and stakeholders to migrate their calls.
- Worked as buddy support for service clients to add model attributes to Targeting Clauses, guiding the team and reviewing 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 axises 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 Scoiety 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/