

Nicholas Lai

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EDUCATION

University of California, Berkeley | Bachelor of Science in Computer Science Expected graduation: Dec. 2021

- GPA: 3.65/4.0

Relevant coursework: Data Structures and Algorithms, Artificial Intelligence, Cybersecurity, Computer Architecture

TECHNICAL PROJECTS

Floorplan Pathfinder

An efficient floorplan pathfinding python product that allows user to upload a PNG of a floorplan, and then quickly indicate floorplan features such as doors, rooms, bathrooms and corridors. This allows users to indicate starting and target locations and calculate the most efficient route.

Entrepreneurs@Berkeley Website and Mentorship Platform

Full Stack Engineering product, creating both the frontend UI and backend supporting systems utilising Python, Django, Bootstrap, AWS and Heroku. The main page is designed to display our club; the supporting platform is designed for providing mentorship to student entrepreneurs, enabling them to network with mentors and receive mentorship via submission of regular help requests and responses to and from our server.

Encrypted File Sharing system

Implemented an encrypted and cryptographically secure file sharing system for which users can upload, share, download and restrict access of files to a database in a manner not unsimilar to current cloud storage systems. Utilised modern cryptographic tools and techniques such as HMAC, HKDF, Symmetric keys to ensure the security of the platform.

Yelp Maps

A visualisation program for restaurant ratings using machine learning and the Yelp academic dataset. The algorithm analyses restaurants and user reviews around the Berkeley Campus and generates a relevant Voronoi diagram allowing users to see which restaurants clusters have the best food ratings geographically and also sort by keywords and preference. The product utilises unsupervised machine learning methods such as the k-means algorithm, grouping and updating clusters automatically as the database is expanded.

EXPERIENCE

Co-President | [Entrepreneurs@Berkeley](#)

Berkeley, California | September 2019 – May 2021

Lead an entrepreneurship organization of up to 60 members which sought to create a diverse and inclusive network of motivated individuals, and empower them on their journey. Designed and innovated upon a start-up program to spark enthusiasm and give structure to start-up teams to create impactful products. Organise and operated collaborative events with external organisations such as Skydeck and Venture for America with 90 attendees. Successfully quadrupled member retention since becoming Co-President.

Teaching Assistant | [Berkeley EECS Department](#)

Berkeley, California | August 2019 – Present

Taught programming concepts primarily in an introductory Computer Science course ([CS10](#)) in a class of 300+ students. Led and organised weekly discussions and lab sections with ~40 students, and hosted weekly office hours. Assisted other teaching staff in creating and grading assignments and exams.

SKILLS/Activities

Programming Languages: Python, Java, C, HTML/CSS, Javascript, Typescript, MySQL, Scheme, RISC V, Golang

Tools/Frameworks: Django, Bootstrap, React, Numpy, Pygame, Git, AWS, Heroku

Clubs/Activities: League of Legends at Berkeley, Entrepreneurs@Berkeley, Gamescrafters, Research, Lab Assisting, Tutoring, Christians on Campus, Archery Coaching

Skills: Event planning, Mandarin, Public speaking, Theatre and Drama, being able to get along with anyone