

Junhong Pan (Paul)

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Education

University of California San Diego **June 2022**
Bachelor of Science, Computer Science GPA: 3.31
Coursework: Data Structures, Algorithms, Theory of Computation, Software Engineering, Machine Learning for Music and Audio

Experience

Research IT Intern | Eli Lilly and Company June 2019 – Aug 2019
React.js, D3.js, Golang, Node.js, AWS Lambda, Confluence, TypeScript, HMMER San Diego, CA

- Launched sequence alignment game for benchmarking different servers' capabilities of running bioinformatics algorithms.
- Improved performance of Needleman-Wunsch algorithm **1000-fold** on a 10,000 sequences batch through parallelization.
- Initiated migration of on-premise hosting to AWS serverless offerings, reduced operation costs by **2 to 3 times**.

Software Engineer | Myze Feb 2020 – Present
Scikit-learn, Flask, React.js, AWS EC2, AWS Cognito, AWS DynamoDB, TypeScript, Python San Diego, CA

- Working for clothing suggestions **startup** and developing **collaborative filtering** algorithms trained on a 30,000-inputs set.
- Spearheading the main website for the company, focusing primarily on the user authentication implementation.
- Secured \$5000 in funding from investors and achieved finalist status at UC San Diego's Triton Entrepreneurship Night.

Awards and Certifications

Best App Design – CodePath iOS Demo Day (github.com/Tinder-for-Boba/FOODIE-Mobile-App) May 2020

- Lead development of UI in a team of 4, carefully picked **cross-platform layout engine (Yoga)** to target all user bases.
- Designed food bonding app which matched users with the same preferences and times available.

Best Cybersecurity Hack – SLO Hacks 2020 (devpost.com/software/slo-hacks-2020) Mar 2020

- Displays Common Vulnerabilities and Exposures (CVE's) of each visited website via a Chrome extension.

CodePath Professional iOS Bootcamp Jan 2020 – May 2020

- Attended 4-month long iOS development bootcamp to learn about UIKit and Storyboard UI development with Swift.

Projects

Beethoven Bot (github.com/paulpan05/beethoven-bot) July 2020 – Aug 2020
TensorFlow, Keras, Python, music21, Magenta

- Created one of few models capable of generating multi-instrument music, took inspiration from **Snap Inc.'s BandNet paper**.
- Leveraged 3-layered **bidirectional LSTM** neural network with **attention layers** to enhance training time and generation quality.
- Authored a **research paper** talking about 6 improvements that can be made to the suggested network by BandNet.

Triton Exchange (triton-exchange.netlify.app) Apr 2020 – June 2020
React, Node.js, TypeScript, AWS DynamoDB, Amazon S3, AWS Lambda, Jest

- Introduced a prototype of UCSD's centralized marketplace with the goal of replacing existing 1000-users Facebook group.
- Lead software development in a team of 10, utilized **Agile Scrum** framework to enhance project quality.

SideTrack (LA Hacks 2020) - Code Green Track Honorable Mentions | Google Cloud Prize Honorable Mentions Mar 2020
TensorFlow, Keras, Python, Flask, Swift, GCP TPU

- Proposed an application which warned users of pothole locations around the city.
- Predicted to have 4000 user-based pothole reports by the end of the year to be used to improve the warning algorithm.
- Derived a 3 million parameters **convolutional neural network** for image classification. Link: devpost.com/software/sidetrack.

Leadership

Front-end Developer | Association of Computing Machinery (ACM) UC San Diego Branch Nov 2019 – Present

- Developed 4 of ACM's front-end tools and landing pages based off of Figma design from the Design team.
- Hosted multiple Python workshops on web services with Flask with **40+ attendees** for each of the workshops.

Technical Committee Member / Projects Mentor | IEEE UC San Diego Branch Sept 2019 – June 2020

- Mentored **3 teams with 4 people each**. Monitored progress to ensure teams are on track for end of the year presentations.
- Organized React workshop as a project mentor and assisted in **10+ workshops** as a technical committee member.

Skills

Languages: Python, JavaScript, TypeScript, Java, Swift, C++, C, LESS, SASS, Go, Bash, R, ARM Assembly, MATLAB, HTML, CSS
Frameworks: React, Redux, TensorFlow, Keras, Scikit-learn, Node.js, Express.js, Flask, Spring MVC
Databases and Tools: DynamoDB, PostgreSQL, TravisCI, CircleCI, GitHub Actions, Jest, AWS Lambda, Amazon S3, Docker