Junhong Pan (Paul)

(626) 691-8088 | panjunhong05@gmail.com | linkedin.com/in/jpan05 | github.com/paulpan05 | thepaulpan.com | Walnut, CA

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
- o Launched sequence alignment game which is used for benchmarking different servers running bioinformatics algorithms.
- o Improved performance of existing existing Needleman-Wunsch algorithm **1000-fold** for a batch size of 10,000 sequences.
- o This is made possible by **parallelizing computations** for multiple simultaneous requests to the web service with Golang.
- o **First person** to propose migration of on-premise to AWS serverless offerings, reducing operational cost by **2 to 3 times**.
- o Reported findings at daily standup meetings. Wrote Confluence documentation on the subject for employees to refer back to.
- o **Technologies:** React.js, D3.js, Golang, Node.js, AWS Lambda, Confluence, TypeScript, HMMER

Software Engineer | Myze   Feb 2020 – Present
- o Working for **startup** which suggests user clothing types using **collaborative filtering.**
- o Currently developing the main website for the company, primarily the user authentication implementation using AWS Cognito.
- o **Technologies:** Scikit-learn, Flask, React.js, AWS EC2, AWS Cognito, AWS DynamoDB, TypeScript, Python

Awards and Certifications

Best App Design – CodePath iOS Demo Day (github.com/Tinder-for-Boba/FOODIE-Mobile-App)   May 2020
- o Lead development of UI in a team of 4, carefully picking **cross-platform layout engine (Yoga)** to target all user bases.
- o Food bonding app designed to match users with other users who have the same preferences and times available.

Best Cybersecurity Hack – SLO Hacks 2020 (devpost.com/software/slo-hacks-2020)   Mar 2020
- o Displays Common Vulnerabilities and Exposures (CVE's) of each website visited via a Chrome extension.

Code Green Track Honorable Mentions | Google Cloud Prize Honorable Mentions – LA Hacks 2020   Mar 2020
- o Developed application which warned users of pothole locations around the city.
- o Used a **convolutional neural network (CNN)** for image classification. Link: devpost.com/software/sidetrack.

CodePath Professional iOS Bootcamp   Jan 2020 – May 2020
- o 4-month long iOS development bootcamp learning about UIKit and Storyboard UI development with Swift.

Projects

Beethoven Bot (github.com/paulpan05/beethoven-bot)   July 2020 – Aug 2020
- o Generated Beethoven style compositions with a 4 million parameters model. Output pitch and timing information is preserved.
- o Utilized **bidirectional LSTM** neural network with **attention layers** to enhance training time and quality of generation.
- o One of the few models capable of generating multi-instrument music. Took inspiration from **Snap Inc.'s BandNet paper**.
- o Wrote a **research paper** on some of our findings regarding improvements to the network proposed by BandNet.
- o **Technologies:** TensorFlow, Keras, Python, music21, Magenta

Triton Exchange (triton-exchange.netlify.app)   Apr 2020 – June 2020
- o Lead software development on a prototype of UCSD's potential future marketplace, replacing existing Facebook selling group.
- o Worked in a team of 10, utilizing **Scrum agile** framework to enhance project quality.
- o **Technologies:** React, Node.js, TypeScript, AWS DynamoDB, Amazon S3, AWS Lambda, Jest

Leadership

Front-end Developer | Association of Computing Machinery (ACM) UC San Diego Branch   Nov 2019 – Present
- o Developer ACM's front-end tools and landing pages based off of Figma design from the Design team.
- o Hosted multiple Python workshops on web services with Flask, having **40+ attendees** for each of the workshops.

Technical Committee Member / Projects Mentor | IEEE UC San Diego Branch   Sept 2019 – June 2020
- o Mentored **3 teams with 4 people each**. Monitored team progress to ensure they are on track for end of the year presentations.
- o Hosted 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