Patrick Shen

US Citizen | Chicago, IL | 3125156021 | pzshen44@gmail.com | linkedin.com/patrickzshen | Website - pshen44.github.io
github.com/pshen44

EDUCATION

Purdue University, College of Engineering **West Lafayette, IN**
Bachelor of Science, Computer Engineering **August 2024 - December 2027 (*Expected)***

- 2x Dean's List, 2x Semester Honors – GPA 3.6/4.0

PROFESSIONAL EXPERIENCE

American Bear Logistics Python | Microsoft Graph API | REST API | Golang | Docker
Software Engineer Intern **May 2025 – Present**

- Building an end-to-end Python automation pipeline leveraging Microsoft Graph API, REST API and Pandas to extract and classify POD files from **4,000+** monthly Outlook emails, uploading to OneDrive and updating Excel tracking sheets, aiming to cut manual processing time by over **90% (7 Hours/week to <30 minutes)**.
- Designing asynchronous attachment parsing logic using filename heuristics and mailbox targeting; goal to acheive **100%** precision in POD detection and enabled **24/7** autonomous operation via scheduled CLI tool with logging.

Purdue Digital Twin Lab Python | OpenAI API | PyTorch | Pandas | CARLA | Git
Software Integration Researcher **Dec 2024 – May 2025**

- Lead research on detection of road anomalies in autonomous vehicles systems with GPT 4.1 API, utilizing CARLA and Python libraries such as PyTorch and NumPy to develop E2E deep learning pipelines, achieving **>92%** model accuracy **(.95 F1)** with average inference speed of **<1s** per frame reducing API token usage by **60%**.
- Automated data processing (cutting manual processing time by **70%**) using Python scipts and optimized training workflows to achieve 50% faster model convergence and reproducibility across experiments.

MayShen (Startup) JavaScript | Node.js | AWS EC2 | HTML | MySQL | Git
Software Engineer Intern (Part-Time) **May 2023 – July 2024**

- Spearheaded efforts in deploying a new company website using JavaScript (Node.js) and HTML, reducing API response times by **80%** and decreasing costs by **20%** through backend optimization and route caching.
- Developed scalable backend services and MySQL queries for e-commerce service to handle **50,000+** daily requests with **<30ms** latency, enabling **400%** faster invoice collection via microservice to 2 AWS EC2 instances.

Illinois State University Python | MATLAB | Pandas | Matplotlib
Data Engineering Intern **June 2021 – July 2021**

- Directed a engineering research project optimizing composites for oxidation and dye removal, utilizing MATLAB and Python (Pandas library) to create Deal-Grove models for **12** different composites with **>92%** accuracy.
- Created research reports for presentations and presented findings in front of **500+** students and professors.

PROJECTS

TrackSwipe TypeScript | HTML | React | Spotify Dev API | OAuth 2.0 API | Node.js
https://github.com/pshen44/TrackSwipe **April 2025 – Present**

- Architecting a full-stack playlist management app using Node.js, React, and HTML, integrating Spotify's Web API with PKCE-secured OAuth 2.0 for real-time playlist control via a custom React UI.
- Optimizing frontend performance to maintain **<2s** average load times and seamless swipe interactions, ensuring **100%** compatibility across 11 device types; supporting up to **25** concurrent users during development.

Self-Driving RC Car Python | TensorFlow | NumPy | Arduino Uno
Parrot MiniDrone **May 2023 – July 2023**

- Designed and repurposed a Parrot MiniDrone using an Arduino Uno and RGB Cameras, training a neural network using TensorFlow and NumPy to autonomously navigate indoors with **80%** accuracy.

SKILLS

- **Libraries/Frameworks:** Git, JavaScript, React, Node.js, PyTorch, TensorFlow, Docker, OpenAI API, AWS
- **Programming:** Python, C, C++, Java, HTML/CSS, MATLAB, MySQL, Linux, Agile Dev., CI/CD, PostgreSQL
- **Coursework:** Data Structures and Algorithms, Harvard CS50x, Calculus III, Linear Algebra, Diff. Equations, C Programming, Statistics, Machine Learning, Object-Oriented Programming, Discrete Math (In Progress)