

Pongpatapee (Dan) Peerapatanapokin

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Education

Purdue University, West Lafayette, IN

Aug 2019 - May 2023

B.S. in Computer Engineering, GPA: 3.79/4.0

Courses: Data Structures, Software Engineering, Advance SWE, Python for Data Science, OOP C++, Advance C programming, Probabilistic Method, Digital Sys Design, Signals and Systems, Undergraduate Research

Skills

Languages: Python, JavaScript, HTML/CSS, C, C++, System Verilog, MATLAB, Java

Technologies: Google Cloud Platform (App Engine, Compute Engine, Firestore, Cloud functions), TensorFlow, Flask, Pytest, SKlearn, OpenCV, Pandas, Seaborn, Tkinter, REST APIs, P5js

Tools: Git, GitHub Actions (CI/CD), Postman, Linux, Android Studio, VSCode

Relevant Experience

Cam2 X Google - TensorFlow Model Garden

Purdue University

Undergraduate Researcher

Jan 2022 – Present

- Collaborating with Google to develop and reproduce exemplar implementation of cutting-edge Machine Learning models and algorithms to contribute to the TensorFlow Model Garden
- Creating exemplar implementations of existing models to address ML reproducibility issues and act as a standard library, so models can be more accessible and extendable for future engineers
- Working with Computer Vision models such as YOLOX and Mesh R-CNN using TensorFlow

National Science and Technology Development Agency

Thailand

Software Engineering Intern - Python ML team

June 2021 – Aug 2021

- Researched on COVID trends and detection methods with Electric Noses
- Collected and Compiled 4 scent datasets with an Electronic Nose
- Visualized, analyzed, and trained KNN and Logistic regression ML models via Pandas, Seaborn, and SKlearn to classify scents from datasets with over 90% accuracy
- Simplified analysis and training process by creating a GUI using Tkinter in Python

Undergraduate Teaching Assistant

Purdue University

UTA for ECE 20875 (Python for Data Science)

Jan 2022 – Present

- Assisted students with course material, Graded assignments, and Proctored exams

Optical Character Recognition Android Application

Purdue University

Undergraduate Researcher (Lead Java Developer) - OCR team

Jan 2020 – May 2020

- Developed OCR android application in Java to extract text from images
- Improved OCR accuracy by ~15% by using image pre-processing techniques with different convolution filters such as Edge Detection, Edge Enhancement, De-skewing, and Thresholding
- Summarized and published a 35-page final report for research and results

Projects

Trustworthy Module Registry

Purdue University

ECE 461 – Software Engineering

Aug 2021 – Dec 2021

- Developed an automatic grading system for NPM modules to characterize their trustworthiness in Python by using content from their GitHub Repositories and REST APIs
- Developed and deployed authenticated REST API in Flask to Google's App Engine, for users to Upload, Update, Download, and Delete trustworthy NPM modules to a registry (Google Firestore Database)
- Developed a test suite consisting of Coverage, Unit, and End-to-End tests using Pytest
- Sped up development by ~30% by automating tests and deployment using GitHub Actions for CI/CD

Litter Detection AI

Purdue University

Purdue EcoMake Hackathon - 3rd Place Winner

Oct 2020

- Develop a camera litter detection system that maps the location of detected litter around the Purdue campus
- Utilized Azure Computer Vision AI to detect litter by sending images from a Raspberry Pi
- Visualized litter coordinates on a website with Google's Geolocation API and a React front-end

Machine Learning Projects

Personal / Purdue University

- Trained AI to play Flappy Bird in JavaScript by implementing the NEAT genetic algorithm with TensorFlow.js and P5js
- Implemented Residual Block from ResNetV1 from 2015 "Deep Residual Learning for Image Recognition" in TensorFlow
- Built Convolutional Neural Network to classify handwritten digits from the MNIST Dataset for MIT Deep Learning Lab
- Built Recurrent Neural Network to generate music for MIT Deep Learning Lab