Kenny Peng

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GitHub: colonelwatch

Interests

Signal processing and applied machine learning

Education

Bachelor of Science in Electrical and Computer Engineering

University of Southern California, May 2023

Cumulative GPA: 3.93

Relevant coursework:
Introduction to Digital Signal Processing
Parallel and Distributed Computation
Linear Systems
Introduction to Embedded Systems

Proficient with

Python (PyTorch, pandas, SciPy, NumPy, matplotlib)

C (OpenCL/CUDA, Arduino)

Familiar with

Unix shell

C++

Git

PostgreSQL

Oscilloscopes and multimeters

PCB Layout (Eagle and EasyEDA)

3D printing and modelling

Projects

Semantic search engine demo indexing 95M academic publications [PERSONAL] May 2023

- Built a pipeline for generating vector embeddings from the titles and abstracts of academics publications in Python (previously PostgreSQL also)
- Iterated parameters of vector index (provided by the Faiss library) according to quantitative indicators
- Released hotfixes to public instance during release

Spatial audio rendering of multiple speakers as a teleconferencing integration [CAPSTONE] May 2023

- Built a pipeline for real-time speaker isolation using beamforming
- Devised procedure for detecting motion in LiDAR data using optical flow (typically used in video analysis)
- Met regularly with team members about state of the project and work for the week

Low-fidelity, real-time fluid simulation demo implemented on a microcontroller [PERSONAL] Aug 2021

- Programmed fluid sim using object-oriented techniques
- Authored a workaround C++ data class in order to deal with an unresolved bug in firmware compiler

Real-time audio spectrum visualizer implemented on a microcontroller [PERSONAL] Feb 2021

- Applied essential digital signal processing concepts like FFTs, convolution, and IIR filtering
- Implemented concurrency between screen output and audio sampling using buffer memory structures

Work Experience

Intern Jun 2022–Aug 2022
Beryllium Ventures

- Solved an optimal play with future knowledge problem for rapid evaluation of different payouts systems
- Translated questions raised at regular meetings into quantitative queries and visualizations using the pandas library in Python

Camera Operator Aug 2021–May 2023
DEN@Viterbi

- Operated audio mixing board, video switcher, and multiple cameras concurrently
- Coordinated with professors and technical support to quickly resolve issues arising during class