patrick@patrickdwyer.com patrick-dwyer33 patrickdwyer33

Patrick Dwyer

2023 Northwestern Graduate. Double major in Computer Science and Math. Skilled in Software Engineering, Design, Data Analysis, and Computer Vision.

Technical Skills

Languages

Python, SQL, Javascript, CSS, SCSS, HTML, C++, Bash(Unix shell), Racket

Tools

Clang, Tower, git/GitHub, GitHub Actions, Visual Studio Code, Jupyter, Node.js

Libraries

NumPy, PyTorch, Matplotlib, Pandas, OpenCV, Flask

Experience

Schwartz Lab: *Lab Tech* **July 2023 – Sep 2023**

- Developed supervised 3d Convolutional Neural Network in PyTorch
- Set up extrinsic camera calibration routine by implementing Levenberg-Marquardt for Bundle Adjustment
- Extended PyTorch torch.autograd.Function class to integrate 3d→2d point projection into autograd
- Manually labelled 8,544 ground truth 2d points using self-made image labeling program

Manifold Group: *Data Science Intern* **July 2022 – Aug 2022**

- Collaborated with head of data analytics to build a modular and extendable data pipeline in Python using Pandas and NumPy
- Visualized data for head of data analytics and partners using Matplotlib and Altair

Manifold Group: *Data Analysis Intern* **July 2021 – Aug 2021**

- Wrote market analysis for Yellowbird which contributed to firms's decision to invest a sum which in the past two years (as of 06-20-23) has increased in value by 250%
- Sourced, prepared, and analyzed market, financial, and founder data for ventures at various stages in the investment pipeline

Home Partners of America: *Software Intern* **July 2020 – Aug 2020**

- Integrated diverse data streams concerning their RealSure website into an interactive, cohesive, and comprehensible Google Data Studio dashboard for insight generation
- Created and visualized metrics in relation to pre-defined "north star" metric

Education

BA: *Mathematics, Computer Science* **Sep 2019 – June 2023**

Northwestern University, Evanston, IL — Weinberg College of Arts and Sciences — 3.43/4.00 GPA

Projects

patrickdwyer.com

Summer 2023-Present

- Responsive CV website built from scratch using no pre-built libraries and industry best practices

LLVM Compiler (Class: Compiler Construction)

Winter 2022

- Built an LLVM⟶Assembly compiler in C++

Story Painter (Class: Practicum in Intelligent Information Systems)

Fall 2022

- Collaborated on a team of three people to create a system that takes in a short story and outputs a picture book that fits the story
- Built as a web app using Python (Flask) for the backend and html/css/js for the frontend which utilized a fine-tuned OpenAI GPT-3 model in conjunction with DALL-E 2 to generate novel and relevant picture books