patrick@patrickdwyer.com patrick-dwyer33 patrickdwyer33

Patrick Dwyer

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

Technical Skills

Languages

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

Tools

Clang, Tower, git/GitHub, GitHub Actions, Visual Studio Code, Jupyter

Libraries

Node.js, 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

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**

- Built with HTML and SCSS, runs on an Apache Web Server

LLVM Compiler (Class: Compiler Construction) **Fall 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 conjuction with DALL-E 2 to generate novel and relevant picture books