patrick@patrickdwyer.com patrick-dwyer33 patrickdwyer33

Patrick Dwyer

Entry level Data Scientist at Manifold Group. Skilled in Software Engineering and Machine Learning. Interested in building software and/or models that improve the world at least a little bit. Based in Saint Louis but open to hybrid positions.

Experience

Manifold Group: *Data Scientist* **October 2023 – Present**

- Data Scientist under consulting arm
- Developing real-time event flagging models on structured data

Rulepop: *Web Developer* **September 2023 – Present**

- Freelance Web Developer for Rulepop, an emerging rules reference platform for tabletop games
- Implemented search using Fuse.js, page sharing using share api and dynamic title switching for all live rules references

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 – March 2023**

- 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

Technical Skills

Languages

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

Tools

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

Libraries

node:http, node:fs, Fuse.js, NumPy, PyTorch, Matplotlib, Pandas, OpenCV, Flask

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 Flask, a python framework
- Created a custom training data set of >50 examples of turning paragraphs with varying lengths into lists of phrases for sequential image generation
- Used OpenAI's public API to fine-tuned OpenAI GPT-3 model using their public API with this custom data, query the fine-tuned model, and feed its output into DALL-E 2 to generate novel and relevant picture books