patrick@patrickdwyer.com patrick-dwyer33 patrickdwyer33

Patrick Dwyer

Data Scientist at Manifold Group with 1+ years of software development experience. Experience in Software Development, Computer Vision, Time Series Modeling/Forecasting, and DevOps. Strong knowledge of Python, Javascript, and SQL. Interested in building software that improves the world at least a little bit. Based in Saint Louis but open to hybrid positions.

Experience

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

- Built CI pipeline for building and publishing back end machine learning and database management services as Docker containers to AWS ECR with GitLab
- Building database management and machine learning backend services in Python and Node.js as Dockerized applications
- Defined postgres database schema in relation to machine learning model requirements and existing data pipeline constraints
- Developing real-time (<30 second response latency) streamed anomoly detection/forcasting models on time series data

Websanity: *Web Developer* **September 2023 – October 2023**

- 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

Technical Skills

Languages

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

Tools

Docker, ECR, Postgres (RDS), Node.js, npm, git, GitHub Actions, GitLab CI/CD, Tower, Visual Studio Code, Jupyter

Libraries

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