



# Patrick Dwyer

Data Scientist at Manifold Group with 2+ years of experience (including internships). Experience in Software Development, Machine Learning, and DevOps. 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 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) online (learns in production) anomaly detection models on structured data

### Websanity: 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

## 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++