



# Patrick Dwyer

Creative Data Scientist with a software engineering skillset. 1 year of professional software development experience. Math and Computer Science double major from Northwestern University. Experience designing and implementing quality machine learning and data products in a team environment. Dedicated to doing things the right way.

## Experience

### Manifold Group: Data Scientist

October 2023 – Present

- Designed and implemented real time physical sensor driven alert system in a team environment
- Utilized best practices for engineering software with Python and followed well established design principles, allowing the team and product to adhere to developing business requirements
- Created CI pipeline to integrate and store Dockerized machine learning application into existing AWS infrastructure
- Translated and developed complex mathematical models into production application

### 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
- 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
- Set up extrinsic camera calibration routine by implementing [Levenberg-Marquardt](#) for [Bundle Adjustment](#)

### 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, EC2, ECR, PostgreSQL, git,  
GitHub Actions, GitLab CI/CD, [Node.js](#),  
[npm](#), Visual Studio Code, [Jupyter](#)

### Libraries

[NumPy](#), [Pandas](#), [sklearn](#), [PyTorch](#),  
[Matplotlib](#), [Vega-Altair](#), [OpenCV](#), [Flask](#),  
[node:http](#), [node:fs](#), [Fuse.js](#)

## 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](http://patrickdwyer.com)

Summer 2023-Present