



# Patrick Dwyer

Data Scientist with a software engineering skillset. Over a 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
- Created **CI** pipeline to integrate and store Dockerized machine learning application into existing AWS infrasture
- 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
- Translated and developed complex mathematical models into production application
- Continuously assessed model quality and managed model remediations

**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
- Implemented fast dynamic loading of HTML partials for all live rules references

**Schwartz Lab: Lab Tech** **July 2023 – Sep 2023**

- Developed supervised 3d Convolutional Neural Network in PyTorch
- Manually labelled 8,544 ground truth 2d points using self-made image labeling program
- Extended PyTorch [torch.autograd.Function](#) class to integrate 3d→2d point projection into [autograd](#)
- Set up extrinsic camera calibration routine by implementing [Levenberg-Marquardt](#) for [Bundle Adjustment](#)

## Technical Skills

### Languages

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

### Tools

[Docker](#), [EC2](#), [ECR](#), [Vertex AI](#), [KFP SDK](#), git, GitHub Actions, GitLab CI/CD

### Libraries

[NumPy](#), [Pandas](#), [sklearn](#), [PyTorch](#), [Matplotlib](#), [Plotly](#), [OpenCV](#)

## 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++