



David Watson

Realizing data patterns yesterday, prototyping systems solutions today, and measuring software's impact tomorrow.

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Summary

Won a **computer science** award before music school catapulting a **computer programming** internship later. Devoted years to designing data products, developing software services, and deploying tool pipelines. Moved ideas to code, data to science, and markdown to markup doc.

Experience

Wyvern 🌐

2023-2024

Technologist (1099)

Nashua, NH

- Designed roadmap to port and deprecate legacy PHP code to MEAN Stack in TypeScript with Docker-Kubernetes deployment

Freelance 🌐

2022

Software Design Engineer

Pittsburgh, PA

- Prototyped Personal Knowledge Management concept around GPT and Requests, experimented with data in Rust/Polars, and LaTeX

Caterpillar 🌐

2021

Technical Consultant (1099)

Pittsburgh, PA

- Built Xilinx ZCU-104 PYNQ code from port of Terrain Visualization code on Intel using C++ GCC Linux by toggling FPGA feature flags in GCC without computational complexity analysis or optimization to gain 20%-50% time optimization for deployment on CAT grader

Carnegie Mellon University (Emerging Technology Center) 🌐

2020

Senior Member of Technical Staff

Pittsburgh, PA

- Artificial Intelligence (AI), Human Computer Interaction (HCI), High Performance Computing (HPC); details redacted

Caterpillar 🌐

2018-2020

Software Engineering Specialist (W-2)

Pittsburgh, PA

- Assembled Sensor Storage for Edge Network on Kubernetes to achieve Dev-Prod Parity using S3 as **protocol not product**, like Minio
- Collaborated with 12 IT execs on planning and implications of hyperconverged infrastructure, cloud native storage
- Tested prototypes related to Git for Data (like Pachyderm or LakeFS) with partner in Golang, optimizing space for 5 V's of big data

Rent Jungle (RainMaker (RealPage)) 🌐

2016-2018

Senior Software Engineer

Pittsburgh, PA

- Led weekly retro resulting in better communication, velocity, and teamwork via nimble methods like affinity diagrams and pairs work
- Crafted Scrapy crawler over Tor (python 3) to cover real estate frontier without detection on Django, PostgreSQL, and Kubernetes

Wellbridge Health 🌐

2015-2016

VP Product Development, IT Compliance Officer

Pittsburgh, PA

- Built data analysis and tools from experiments in pandas and Python.
- Deprecated legacy App Store dependency using browser-based Ember SPA MVP designed and delivered in concert with MAYA Design
- Developed API backend on Python 3 - Django REST Framework, PostgreSQL emitting JSON API to Ember SPA on Aptible

Hire an Esquire (Major, Lindsey, and Africa) 🌐

2014

VP Engineering

Pittsburgh, PA

- Led a team of 6 through a lean Python 3 redesign and refactoring of the entire UI/UX from legacy MVP Django system
- Reduced daily production firefighting by using nimble methods, automated tests, CI/CD, code review and design review

Experience (continued)

Forever 🌐

2013-2014

Senior Software Developer

Pittsburgh, PA

- Prototyped full-stack (Bootstrap to Heroku) on Proxmox-Gitlab quickly on Python 3 before porting MVP from Python to Ruby on Rails
- Enabled the company to capture strong market traction in just a year after releasing 1.0 e-commerce platform finished at Neo

SMaSh - Brainstorm SMS Technologies (Mind Matrix) 🌐

2011 - 2012

Senior Engineer

Pittsburgh, PA

- Wrote conversational text systems (like twilio) in Python, PostgreSQL, Flask, and Requests on Fedora Linux
- Supported large SMS text campaigns from Pittsburgh Steelers to Miller-Coors

Wellspring 🌐

2010-2011

Software Development Manager

Pittsburgh, PA

- Responsible for Sophia and Flintbox product development, deployment, and support
- Led team of 12 from slow legacy data center of more than 1M SLOC to fast, automated SaaS virtualization of CI/CD, DevOps, and SRE
- Prototyped systems using Capistrano (Ruby), Mechanize (Python), and Selenium with team of 4-7 software engineers

Applied Perception (Foster Miller (Qinetiq)) 🌐

2008-2009

Project Engineer

Pittsburgh, PA

- Visualized XML sonar data in Python Beautiful Soup server and Microsoft Visual C++ GUI client on Windows for UUV deployments
- Ported Microsoft C# Windows GUI application to C++, Qt, Ubuntu Linux for OCU deployment of Talon Robot in EOD applications

NOMOS (North American Scientific, Best Medical) 🌐

2006-2007

UI Software Engineer

Pittsburgh, PA

- Coded C++ QA tests, maintained Perl code review system, CORVUS FDA-regulated product, team of 12, ~2M SLOC Mac
- Prototyped wireframes and rendered storyboards in C++/PyQt for adaptive 4D treatment planning with team of 4

MAYA Design (BCG) 🌐

2004-2006

Software Design Engineer

Pittsburgh, PA

- Deployed python web services emitting JSON to JDA clients on team of 4 developing A+ Schools, 3RC, DHS to win an award
- Demoed GUI lighting IoT Zigbee PoC in C#.net/COM/Visio on Windows for Phillips execs in 5 days sketch-to-code

Cobind 🌐

2003-2004

Cofounder

Pittsburgh, PA

- We borrowed cobind from DNA signifying *cooperative binding* - app/os tightly bound at build-time vs. loosely bound at run-time
- Collaborated on Linux Tools startup with cofounder and consultant. Received worldwide press acclaim after Idea Foundry Fellowship
- Progeny, Suse, RPath, and Timesys built linux online but few used browser as UI/UX then. Now *spins are in* - every distro has them.

Education

Duquesne University 🌐

Bachelor of Science in Business Administration

Coursework

Computer Science, Music Education, Technical Writing

Passion

Reading is Leading, Writing is Synthesizing, Running is Musing

Books

Crystal Clear, Flow (Csikszentmihalyi), Lean Software (Poppendieck, Ries)

Continuing Education

Git Foundations 2012, PyCon 2018-2019, MIT IAP 2012 RDBMS (Stonebraker)