

David Watson

Joy is finding flow in writing code, music, and prose: bookish, solitary, AND social.

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Summary

From technique to technology, a **computer science** award before music school led to a **computer programming** internship afterward. From college to **data center**, gigs and hacking transformed studios into **startups**. Code is communication like music. Communication is code and data too. **AI FTW!** Meaning is found in meatspace, from humans to computers and code to communication. Ideas are imaginary. Prototypes are probable. **Products prove profitability as impact gives meaning to legacy.**

Experience

Freelance Software Generalist @ 🌐 **2020-2024**
Pittsburgh, PA

- Carnegie Mellon University Senior Member of Technical Staff, ETC
- Caterpillar Tech Consultant (1099) C++/GCC/Linux ZCU-104 PYNQ Terrain Vis.
- Wyvern Tech Consultant (1099) NodeJS, TypeScript, Docker(compose), k8s

Caterpillar: Software Engineering Specialist @ 🌐 **2018-2020**
Pittsburgh, PA

- Assembled Sensor Storage for Edge Network on Kubernetes using Python 3, Minio, and PostgreSQL with a team of 4 engineers
- Collaborated with senior IT staff of 12 over planning and long-term implications of hyperconverged infrastructure on cloud native storage

Rent Jungle (RainMaker (RealPage)) 🌐 **2016-2018**
Senior Software Engineer Pittsburgh, PA

- Led weekly retro to 2x better cadence, communication, velocity, and teamwork
- Crafted Scrapy/Tor (python 3) crawler on Django, PostgreSQL, Kubernetes

Wellbridge Health 🌐 **2015-2016**
VP Product Development, IT Compliance Officer Pittsburgh, PA

- Led 4-person interdisciplinary design team through Ember SPA MVP designed and delivered in collaboration with MAYA Design
- Developed REST API backend using Python 3/Django, DRF and PostgreSQL emitting JSON API to Ember SPA on Aptible with 4-person team

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 for attorneys and agents
- Reduced daily production firefighting by more than 50% using nimble methods, automated tests, CI/CD, code and design review

Forever 🌐 **2013-2014**
Senior Software Developer Pittsburgh, PA

- Prototyped full-stack front-end (Bootstrap) to back-end (Heroku) cloud proto of idea in 2 weeks on Python 3 before porting MVP Python -> Ruby on Rails
- Enabled the company to move from 0 sales to strong market traction in under a year after releasing 1.0 e-commerce platform finished @ Neo, Columbus, OH

Tools & Tech

Linux

● ● ● ● ●

arch, debian, redhat, fedora, ubuntu

MacOS

● ● ● ● ●

BSD

Windows

● ● ● ● ●

WSL 2

Containers

Docker, Podman, LXC/LXD

● ● ● ● ●

Virtualization

Proxmox, KVM

● ● ● ● ●

Private Cloud

Kubernetes, k3s, minikube

● ● ● ● ●

k8s, helm

Public Cloud

AWS, GCP, Azure

● ● ● ● ●

aws, gcp, azure

Databases

MySQL, PostgreSQL, SQLite

● ● ● ● ●

Frameworks (Scaffolding)

Django, Flask

● ● ● ● ●

Prompt Engineering

4 I's: Idiomatic, Improvisational, Interstitial, and Iterative declarative language as AI input and Python as low-code, algorithmic pseudocode

● ● ● ● ●

Programming Languages

C++

Microsoft VS Code and GCC

● ● ● ● ●

Markup

HTML, CSS, Markdown (MD)

● ● ● ● ●

Python (2.x and 3.x)

Multi-paradigm

● ● ● ● ●

Ruby

functional

● ● ● ● ●

Shell

bash, fish, zsh

● ● ● ● ●

Experience (continued)

SMAsh - Brainstorm SMS Technologies (Mind Matrix) 🌐

2011 - 2012

Senior Engineer

Pittsburgh, PA

- Wrote conversational text systems (like twilio) in Python/PostgreSQL
- Supported large SMS text campaigns from Pittsburgh Steelers to Miller-Coors

Wellspring Worldwide 🌐

2010-2011

Software Development Manager

Pittsburgh, PA

- Pioneered SRE culture from legacy data center to SaaS VMWare CI/CD modernization with a team of 12 Engineers
- Built DevOps systems using Capistrano (Ruby), Mechanize (Python), and Selenium with dev team of 2 Sys Ops Engineers and 4 Test Ops Engineers

Applied Perception (Foster Miller (Qinetiq)) 🌐

2008-2009

Project Engineer

Pittsburgh, PA

- Visualized XML sonar data in python backend/C++ GUI application on Windows
- Ported Microsoft C#.net Windows GUI to C++/Qt/Linux for OCU deployment

NOMOS (North American Scientific, Best Medical) 🌐

2006-2007

UI Software Engineer

Pittsburgh, PA

- Coded C++ QA tests and maintained Perl code review system to CORVUS FDA-regulated radiation oncology product with dev team of 12 and QA team of 4
- Prototyped wireframes and rendered storyboards in C++/Python2/Qt for adaptive 4D treatment planning with team of 4

MAYA Design (BCG) 🌐

2004-2006

Software Design Engineer

Pittsburgh, PA

- Built python 2 REST backends emitting JSON for consumption by AJAX frontends on dev team of 4 building dhs.net, A+ Schools, 3RC websites
- Demoed GUI floor-plan Zigbee wireless lighting designer IoT PoC in C#.net/COM/Visio on Windows for Lutron/Phillips < week from designer sketch

Cobind 🌐

2003-2004

Cofounder

Pittsburgh, PA

- Collaborated on Linux Tools startup with cofounder and consultant where we borrowed cobind concept signifying binding an app with its OS
- Received worldwide press from USA to Norway to Australia around Linux products after winning Idea Foundry Fellowship; wrote python 2 ops code

Passion

Reading, Writing, and Running

My dream is to run coast-to-coast authoring a few books from Boston to Seattle.

Education

Duquesne University 🌐

BS-BA

Core Credits in Computer Science, Technical Writing

Music School Dropout

Awards

Top 100 Award

[Infoworld](#)

We built AJAX, JDA, and APIs together before members launched a [book](#) and a [school](#).

Transformation Fellowship

[Idea Foundry](#)

[Open Source is a Social Contract](#)

[My First FOSS Contribution](#)

[My Github Profile](#)

[My LinkedIn Profile](#)

[Books -> Beliefs -> Values](#)

[Crystal Clear \(Cockburn\)](#)

[Lean Software \(Ries\)](#)

[Peopleware \(Demarco, Lister\)](#)

[Continuing Education](#)

[Git Foundations @ GitHub](#)

[MBSR @ UPMC](#)

[RDBMS @ MIT](#)

[PyCon @ Cleveland](#)

[Arduino Physical Pixels](#)

[Code, Portfolio, References](#)

[Available On Request](#)

Music and software are similar forms of communication. Agile begins with personal flexibility in the brain and grows with social reinforcement in the team. The spectrum of logic, grammar, math, and music started with the liberal arts and may end with AI. My life's work is a three-circle Venn diagram of signifiers: ideas as imaginary-possible, prototypes as probable-symbolic, and products as profitable-real, with the intersection at the center being Clarke's Three Laws.