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## Summary

I'm an experienced back-end developer, mostly using Python, who really cares about programming. For you, this means that I create products that work reliably, and are less expensive to maintain and extend in the future. Deliveries are incremental and frequent, to make progress legible to all.

Good teams are a pre-requisite, which means continuous mentoring, pairing, jovial relationships, real talk, and pride in our mutually raised expectations of one another.

## Experience and technologies

I have 15 years experience in **Python** (and have used Go, C, C#, C++). I created Colorama, the world's 28th most popular Python library. This summer, I was an instructor in Stanford University's Code in Place 2025, and in the past I was tech reviewer on O'Reilly's Test Driven Development with Python. I've presented at multiple PyCons and am a Fellow of the Python Software Foundation.

I consult and mentor in **Test-Driven Development (TDD)**, and my favorite roles have used this intensively, where it aligns with the team, along with other **Agile** and **eXtreme Programming** techniques such as **pairing** and **trunk-based development**.

## Current Role

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| **Ambient**<br>*Apr 2025 to Jul 2025.* | **Web APIs** to manage devices in apartment blocks, such as unlocking doors from mobile apps, while providing web UI and API for landlord executive functions such as defining gym opening hours, and setting vacant unit thermostats. (**Python 3.13**, **FastAPI**, **Pydantic**, **SQLAlchemy**, **SQL**, **Docker**, **K8s**, **AWS EKS**, **AWS RDS (PostgreSQL)**, **event-driven**, **AWS Lambda**.) Caught in a large layoff after a few months. Excellent references available. |

## Previous Roles

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| **Lambda**<br>*Sep 2023* to *Feb 2025* | Lambda's public cloud provides premier GPUs for customers to train AI models. My team converts events like customer GUI or HTTP API requests into hypervisor configuration changes across many data centers, including defining GPUs, storage, & networks, presenting the resulting VMs to users as their own private cluster. There I created our first on-hypervisor agent, which I deployed to the bare metal fleet by trailblazing as "first customer" for our nascent in-house ArgoCD setup (declarative gitops for k8s). I then migrated functionality, starting with server health checks, from a central command-and-control service, to the agent. This eliminated a previous anti-pattern of micro-managing many hypervisors from afar with low-level commands over ssh, making the code simpler, more performant, and eliminating classes of errors & races, thus improving user experience and reducing on-call burden. (**Python**, **FastAPI**, **Pydantic**, **PostgreSQL**, a little **Go** and **Typescript/Vue**) |

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| **Canonical**<br>*May 2019 to July 2023* | The *Snap Store* is an app store for Linux applications. The backend **Django web APIs**, using intensive **PostgreSQL**, some **Redis**, and **LXC** containerization, to serve 5k req/s securely updating hundreds of millions of Linux devices. One time I consolidated code from the company's various other binary downloadable artifacts to all be handled by the Snap Store, converting it into a generic "binary artifact store", decommissioning other teams' services as their functionality was subsumed, while preserving compatibility with diverse public APIs for each artifact type, and honoring high-traffic SLAs. |
| **IBM Cloud**<br>*July 2017 to May 2019* | Implemented IBM Cloud's *security groups* feature in **Go**, against **Oracle** databases, to implement dynamic on-instance firewalling by converting user requests into **iptables** config across many instances. I also produced & presented my own training course several times, ultimately across the whole division, teaching hundreds of developers how to contribute *good* tests to the massive IBM Cloud **Python test suite**, dramatically reducing time spent on creating and maintaining tests, while making the tests themselves orders of magnitude faster, more thorough, and more reliable. |
| Contracting for **Able.ag, Antidote.me, Made.com, BATS Trading, Rangespan**<br>*June 2011 to June 2017* | Often as a tech lead, such as at *Able.ag*, where I relieved the company's technical founder of architectural, design, and mentoring responsibilities. Usually these roles created **web APIs** in **Python**, ingesting, transforming and **ElasticSearch** indexing large amounts of **data**. At e-commerce startup *Rangespan*, we integrated with hundreds of suppliers, to ingest data to **MySQL** for 100 million product lines, and then routed over a billion sales from participating retailers to dynamically selected suppliers. At furniture retailer *made.com*, I was hired to **fix a dysfunctional team**, which was moribund from years of technical debt. I **mentored** individual team members, hired some new ones, replaced the week-long manual deploy process with modern **CI/CD**. Together we then radically overhauled the processes and codebase, allowing the team to restart predictable deliveries of business-critical features to production. |
| **Resolver, aka Python Anywhere**<br>*Sep 2006 to May 2011* | Hardcore eXtreme Programming startup, writing spreadsheet-like applications in **Python** and **.Net**, for financial and scientific customers. Wrote a both a desktop and web spreadsheet application from scratch, including statistical functions to match Excel's. A transformational baptism in intense **TDD**, total **pairing**, **trunk-based development**, albeit one which made the mistake of competing with Excel. |
| **GIS consultant**<br>*Aug 2003 to Sep 2006* | Single-handedly designed and coded *Habitat Capture*, a desktop GIS tool in **C#** using **ArcObjects**, which end users described as "*about a billion times better*" than their last commissioned tool. The dataset they produced with my tool ended up winning the British Cartographic Society's award for the year. For *Ordinance Survey* I designed **spatial SQL** queries to run against MasterMap in **Oracle**, the UK's definitive multi-terabyte geographic dataset. *ESRI UK* asked me to create an AutoCAD to ArcMap importer in **C#**, improving over their existing one by correctly handling nested geometries such as holes. |

## Education

University of Durham (United Kingdom). Bachelor of Science: 2:1 (with Honors) in Electronics.