

Beyond My Resume

My career has repeatedly put me in situations where the thing I wanted to accomplish required expertise I did not yet have. Rather than treating the boundaries of my formal training as boundaries on what I could do, I learned the necessary methods, built the necessary tools, and figured out how to make them work.

That pattern became especially clear during my PhD in Nutrition & Metabolism at the University of Wisconsin-Madison, where I study the molecular biology of aging and interventions that delay it. My research integrates high-dimensional transcriptomic, proteomic, lipidomic, and alternative-splicing data to understand how different molecular layers coordinate during large-scale biological responses. That work has required me to develop my own analytical pipelines in R and Python, use unsupervised machine-learning approaches to identify structure and relationships across molecular datasets, and scale analyses across distributed computing infrastructure when they exceeded what could reasonably be handled locally.

I entered graduate school as an experimental biologist, so these were not skills I had been formally trained in. I learned increasingly sophisticated computational methods because the biological questions demanded them. Eventually, other laboratories and collaborators trusted me to code computational analyses for their own projects, and that work has survived peer review and contributed to published research.

What I learned from that process was broader than any particular programming language or analytical method. I discovered that I am unusually comfortable entering technical areas where I am initially an outsider, figuring out enough of the underlying system to become productive, and then transferring ideas between fields that ordinarily do not communicate with one another.

That is why the same analytical thinking has subsequently taken me well beyond my dissertation. I have applied predictive modeling to business problems for a startup to track customer behavior. I am currently volunteering with a nonprofit, working closely with its development and research teams. We have been analyzing a roughly 40 TB dataset containing the entire historical corpus of Reddit posts and comments, where I have been helping software developers think about how methods I use to integrate high-dimensional biological data can be adapted to very different kinds of information. Building on that work, I developed analytical pipelines using semantic modeling and embeddings to examine how narratives and disinformation propagate between communities and change over time.

My doctoral minor in Business, composed entirely of MBA coursework, has broadened that further by exposing me to consulting, organizational change, and data and platform migration strategies. Combined with broad professional experience predating graduate school, I've become comfortable moving between scientific, technical, and business conversations with the understanding that the same problem often looks very different depending on who is sitting at the table.

AI has become another extension of that same pattern. I have done paid AI post-training work, much of it under NDAs, but my interest goes considerably beyond using AI professionally. I read AI and machine-learning research because I genuinely enjoy it, and I have an absolute blast taking ideas from literature and figuring out strange, useful, or completely novel things I can do with them.

Increasingly, this has meant building the infrastructure myself. I work with locally hosted models, custom AI harnesses, agentic networks and orchestration, automated research and analytical workflows, and distributed task routing across machines on my home network. I am developing

these systems because I want to build increasingly ambitious applications of AI faster, experiment freely, and understand the systems I am working with rather than treating them as black boxes.

That tendency extends beyond software too. I build the computers I use for computational work. I have built my own 3D printer and repaired recycled qPCR machines and microscopes because I wanted those capabilities for projects of my own. I use some of that equipment for personal-interest research out of my apartment. These are not things I do because my work requires them. I do them because when something interests me, I have a difficult time being satisfied with merely understanding it superficially. I want to take it apart, understand how it works, and eventually figure out what else I can make it do.

None of those things individually defines what I am looking for professionally. Collectively, however, I think they say considerably more about how I work. Rather than claim to be the world's foremost specialist in every field I have worked in, I believe my value is different. I have repeatedly demonstrated that I can teach myself difficult technical subjects, become productive in unfamiliar domains, make connections between fields, communicate with people whose expertise is very different from my own, and turn unfamiliar methods into working solutions.

I do not yet know what single conventional job title best captures all of this, and I am increasingly convinced searching for one may be the wrong question. What I hope is clear is that my doctoral work represents one application of a broader pattern: I've repeatedly taken technical skills and ways of thinking developed in one domain and adapted them to solve difficult problems in another.

What I am looking for is an environment where scientific depth, computational thinking, AI fluency, curiosity, versatility, and extreme self-direction are useful together. That could be in scientific AI, computational biology, AI-accelerated drug discovery, research automation, scientific software or platforms, technical strategy, or something I have not yet encountered.

More than anything, I want to continue to learn while working on difficult and interesting problems with people who value someone willing to cross disciplinary boundaries to solve them.

I am eager to find a professional home for that.