

One Story of Leaving Academia for Industry

Ray D. Karpman

In July of this year, I left academia, teaching and doing research in algebraic combinatorics, for a job in industry. I now work at a tech nonprofit that makes software for libraries. This was one of the best decisions I have ever made. If you're planning a similar transition, I have very little actionable advice. What I do have is my story, and some highly personal and idiosyncratic observations about the process.

I became an academic because I knew I was good at math, and I wanted to do something meaningful. Teaching seemed wholesome, idealistic work. In Fall 2019, I landed my dream job: teaching at a small liberal arts college, in the city where I'd settle with my soon-to-be spouse. I was elated. Then came the COVID-19 pandemic.

Remote learning sucked the joy out of teaching, and left me too burnt out to even think about research. University administration took advantage of the crisis to cut programs and dismiss tenured professors, through a months-long bureaucratic process involving many long emails to the faculty listserv. With my job feeling increasingly precarious, living on an assistant professor's salary not necessarily allowing one to save for a rainy day, seemed less and less tenable. Something had to give.

By late spring 2020, I was determined to leave for industry. Many of my peers from graduate school had moved to data science, and I wanted to join them. There was only one problem: I had essentially no relevant knowledge. While math and data science do overlap, it's entirely possible to get a PhD in pure math without knowing any statistics. I'd picked up a bit of Python programming, which did turn out to be helpful, but I'd never touched real data in my life.

For about a year, I tried studying on my own. There's a wealth of free data science content online. In theory, a sufficiently motivated person could teach themselves whatever they need to know. But I struggled. Pandemic fatigue sapped my motivation. Trying to learn a whole new discipline was overwhelming—I would read one article, work through one programming tutorial, and then become discouraged by how much I didn't know.

Finally, in August 2021, I signed up for an online data science boot camp called Springboard. Rather than a traditional course structure, the program features a curated collection of preexisting online resources, as well as basic

templates for two in-depth data science projects. Each student was paired with an industry mentor, who provided guidance and support during weekly half-hour Zoom calls, and graded our projects. While the primary focus was technical know-how, there was also a substantial career coaching component which covered networking basics, interview skills, and job-search strategy.

Several people have asked me whether I'd recommend Springboard, or boot camps in general. My answer is a rousing "it depends." On the one hand, it clearly worked for me. I love my job, and I don't think I could have made this transition without intensive, individualized support over an extended period of time. Springboard gave me the structure I needed to complete multiple in-depth portfolio projects, which I believe were crucial to my landing a job.

On the other hand, the program cost \$10,000. My career change meant a substantial raise, so it has technically paid for itself. But I'll be making loan payments to Springboard for the next three years, and that's a lot. The time commitment was also daunting. In theory, we were expected to work 16–20 hours per week, and finish in about six months. In practice, I rarely logged 16 hours of focused work in a week—I was teaching, planning a wedding, and fighting off ongoing burnout. Even when I found time to study, 20 hours a week was only enough time to do a barely acceptable job on assignments. I was stressed the whole time, and my capstone projects were frankly mediocre.

Overall, I think most people are better off getting as far as they can with free or low-cost resources before considering a paid program. I especially recommend exploring the many resources designed for mathematicians specifically. I've attended a few events hosted by The Erdős Institute, for example, and recommend them highly—you can check them out at <https://www.erdosinstitute.org/>.

After finishing Springboard, I threw myself into the job search. I applied to dozens of jobs in the course of a month, receiving either no response or automated rejections. When I saw the posting for my current job, I was thrilled. I loved the idea of working with libraries and contributing to research from behind the scenes. But I was afraid they'd never consider me. I met fewer than half of the required qualifications, and had no relevant work experience—they wanted several years. After consulting my Springboard career coach, I decided to take a risk and apply.

Weeks of silence followed, during which I became increasingly discouraged. By the time I was invited for an interview, I'd managed to get COVID. I powered through multiple rounds of Zoom calls, sweating through my blazer in my home office/isolation chamber. I was a mess. It didn't matter. A few days later, I was hired.

As it turns out, the manager for my team came from a research background, and saw value in my academic accomplishments that others might overlook. The company's data science team was relatively new, and they needed people comfortable with uncertainty and with long-term,

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open-ended projects—something academic research prepared me for extremely well. When I applied, I knew none of this. I could only see the ways I fell short.

This brings me to my one actionable piece of advice: don't be too quick to count yourself out. Apply to jobs that feel like a reach—the worst they can say is “no.” As a candidate, it's tempting to feel you must be perfect to get hired. And yes, hiring managers can be sticklers about all kinds of things—from technical skills, to cover letter format, to thank-you notes. But imperfect candidates do get jobs all the time, and you don't have to check every possible box to be a good fit.

I'd been terrified hearing about the grueling interview process at some large tech firms, but it turns out that isn't universal. There were two rounds of interviews, which included some technical questions but no live-coding challenges or off-the-wall brain-teasers. The tone was distinctly friendly and open—not the high-pressure interrogation that I'd feared.

So far, the job itself has been great. While I no longer do research-level math, the work is engaging. Optimizing a SQL query tickles the same part of my brain as writing a proof. In academia, I often felt dismissed and under-valued. Here, I'm a respected part of the team. I don't have to continually re-establish my credibility, my worth. I'm encouraged to have clear work-life boundaries; multiple senior colleagues have reminded me not to work weekends.

To my surprise, I like having a manager—the day-to-day accountability makes me feel more relaxed, and better able to focus on the technical problems at hand. Finally, my salary is about \$30,000 more than it was at my previous job. When it comes to quality of life, money matters. Everything is a little easier, a little less stressful.

I don't believe in regret. I've learned and grown from every chapter of my life. But if I could do it over again, I would have left pure math years ago. My first few months in industry have been better than I ever could have imagined—full of meaningful challenges and unexpected joys.



Ray D. Karpman

Credits

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