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Follow Your Passion

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I got an aggressive start in actuarial science: I evaluated colleges based on their actuarial science departments and did not look back until I achieved my FSA. In my decade at Milliman, I have had at least three different careers. After spending my first years as a bumbling beginner, I was briefly a consultant. Now I productionize data-focused solutions and consider myself somewhat of a statistically focused “intrapreneur” (an entrepreneur who works from within a large organization).

In all of my career phases, my biggest joy has been learning. SOA exams grounded me in the ideas of actuarial credibility and the intricacies of the U.S. health care system, while consulting has helped me focus on solving relevant business problems. Trying to maintain long-term successful solutions showed me the need to know more about software development.

While doing traditional consulting work, I would have the pleasure of assisting on a valuable solution that could be expanded to multiple clients. At first we would just copy and paste everything, and then alter the copy until it worked for the next client. As my colleagues and I got better at problem-solving with applied statistics, our solutions started living longer and longer, and we were eventually maintaining years-old solutions. A common (and true) software idiom is that the worst code you will ever see is the code you wrote six months ago. A few of us had recently finished our actuarial examinations and felt like we had the appetite to learn more and do better.

The software development profession does an excellent job encouraging self-learning; many resources are available. My personal learning style is to consume a torrent of text. I read a mix of current blogs and authoritative textbooks. The textbooks impart a deeper understanding of complex concepts, while the blogs provide a broader picture of modern best practices (and pain points). I would quickly jump between specific subjects as they became important to my current duties; this way, I was always reinforcing what I was reading with applied practice. I feel a large tipping point at this stage in my career was the transition away from spreadsheets and toward fully embracing modern revision control systems (e.g., Git and GitHub) for everything we did.

The ability to produce robust, reusable, extensible, testable, maintainable and automated solutions is invaluable. I am still not an expert (and may never be), but I know a lot more now than an average actuary. I work with professional software developers and can often view problems and solutions from their perspectives. I can work with the tools they use and offer meaningful contributions to the analytics components of our products.

In particular, the solid data intuition gained during my earlier years is a great asset to have in the field of software development. Not only can I quickly dismiss some results as incorrect, I can often give helpful suggestions as to which stage in an analytics pipeline most likely contains the responsible errors.

A pure computer science education can leave somewhat of a blind spot when it comes to the meaning behind data. Data might be treated as an inconsequential abstract quantity, or a black box best left unopened. Software projects often rely upon business analysts writing (excessively detailed) requirements documents to ensure the results are solving the right problems. This is an understandable division of labor, but not one we can afford to utilize for all changes or enhancements, which is due to our team size. All of our developers currently get to dabble in deployment and operations. The actuarial expatriates like myself spend more time directly committing changes to pertinent business logic (and authoring appropriate unit/regression tests) than documenting what needs to be done for others.

We are continuously trying to improve our new hire training, and this has had to be adapted to the hiring of dedicated computer science graduates. We have found it valuable to dedicate time in their first weeks to familiarizing them with common health care data sources. We explain why these sources were collected and how we utilize them. We try hard to ensure they are not just abstract tables and fields.

I have greatly enjoyed learning more about the field of software development. I feel it has shaped my career and my abilities in a positive direction. I do not know how long my career will stay in this phase, but I feel I am bringing valuable context and contributions to my new colleagues. ■



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