Goals Statement | William Ermlick

When I took my first internship as a business development intern at Harrity & Harrity LLP in the summer of 2014, I was confident that a career in patent law was the path I would take. As an engineer and lifelong learner, the field is an exciting space for graduates wishing to put their technical parlance to work while staying contemporaneous with the latest technology. What I did not foresee, however, was the huge potential at the crossroads of patent law and data science and how that would shape my life over the last four years.

The internship was an intense experience to say the least. The law firm is an intellectual property firm specializing in the preparation and prosecution of patent applications and keen on collecting and analyzing data to optimize their performance. Efficiency and quality is their game, and they are good at it.

I had the opportunity to get my hands dirty in data for the first time that summer. It turned out that letting empirical evidence make key business decisions was simple, effective, and fun. I saw projects through from start to finish and gained first-hand experience as to the power that objective data can provide. Some of the ventures I undertook included ascertaining what prosecution strategies were most effective within the firm based on interview statistics, assessing possible business partners for the firm to target on a trip to Japan, and finding instances where the firm’s clients were potentially committing fraud. While the technical techniques I learned here were somewhat rudimentary, this position introduced me to the real world applications of empirical solutions and influenced my time as an undergraduate.

My major at Virginia Tech was one that is likely to bore most people. Engineering Science and Mechanics is a timeless major that focuses on the fundamentals of engineering mechanics and falls squarely within the ambit of mathematics. During my four years I developed deep analytical thinking and problem solving prowess distinct from the stochastic and statistically minded approaches offered in data analytics, but nonetheless critical skills to develop for a data scientist.

After getting a flavor for data through the internships I undertook, my senior year I was afforded the opportunity to take a statistical learning class for graduate credit. Here I learned techniques such as cross validation, bootstrapping, lasso regression, and other statistical data analysis approaches. The class culminated in a final project which my team completed in conjunction with Harrity & Harrity LLP where we data mined patent data and trained various classifiers to make predictions. It was after this I witnessed the powerful results we obtained that I realized my true interest in patent analytics.

Fast forward to today and, indeed, it seems that is where I ended up. I am currently a Patent Examiner for the United States Patent and Trademark Office where I spend my days reviewing new inventions and making patentability decisions. As one of ordinary imagination may infer, there is a large number of patents in the world, each with various associated data and metadata. Interestingly enough, surprisingly few companies analyze this data. Large corporations such as Juristat and LexisNexis perform almost all of the intelligence needs for intellectual property firms and, thus, there is a ripe employment opportunity in providing data analysis custom tailored to particular firms.

I have been fortune enough to find myself in a position of having both intimate knowledge of the inner workings of patent law and a practical understanding of data analytics. My purpose in applying to George Mason is to wrangle together the tools I need in order to effectively analyze the wealth of data in the patent domain and to begin to create products that aid attorneys in the real world. By learning data science in an academic environment, my hope is that I can connect with those who share my interest and gain the educational and networking foundations I need to make my passion a career.

I appreciate your time and thank you for considering my candidacy in the Data Analytics program at George Mason University.

Best regards,

William Ermlick