Writing Exercise 1 (Dr. Nathan Crock)

Dr. Nathan Crock is the director at NewSci Labs and gave an intriguing talk to our class on November 12th. In the hour-long talk, he highlighted the differences present between academia and industry in the data science field, gave real-world examples of problems his company was hired to solve, and fielded numerous questions from the class along the way. His talk’s structure made it straightforward to gather informative career advice from a professional as well as highlight the potential implications of their technical work on common people.

To start his talk, he gave a quote by Edmund Burke which claimed, “When labeling we are at risk of circumscribing reality within the confines of our own notions.” This was a powerful quote with which to start the entire presentation as it put into perspective for all that no matter how knowledgeable on a subject one believes one to be, one is at best speaking only to their notion of the truth and could merely be scratching the surface of the actual deeper truth. He later goes into an anecdote outlining how NewSci had to go through three different companies and then find a singular person who made the data set twenty years prior in order to begin understanding the data set given to them from the business that came to them asking vaguely for AI. Hearing about both the nebulous ask for AI since the company didn’t really understand what it meant in addition to the numerous hoops and hurdles through which NewSci had to navigate in order to analyze the data given to them served as a reminder that classwork is curated to teach lessons first and foremost, and classwork’s cleanliness and workability are typically not the case in the real world. Another piece of useful career advice I gleaned from his talk was at the end when Dr. Crock discussed the qualifications his company looks for in an intern, which aided in understanding several possible ways by which an applicant could be evaluated. As a general statement - since every company has its own hiring procedure and qualifications - his discussion highlighted how theory and abstract concepts taught in classes are great building blocks, but these ideas are of no use if one is unable to apply these ideas correctly and effectively to a problem, which is what really matters in the workforce.

On top of the several pieces of career advice I found useful from Dr. Crock’s presentation, he also discussed a couple of the pieces of work his company produced where there are possible implications for the common person, such as the automatic animal face cropper for DivvyUp as well as Call Simulator for 911 call operators. Every customer and gift recipient of DivvyUp has been a beneficiary of AI without even knowing it. In addition to this enjoyment, there are other implications for the technical work if the ideas behind getting it to work are extrapolated. NewSci used Laplace Transforms, rotations, scalings, and convolutions in order to create a maximum convolution matrix that was used to teach their software where an output image came from in relation to the original image, which could potentially be altered to work on more than just animals. The last piece of work he talks about is their Call Simulator software which trains 911 call agents. This obviously has massive implications for every person as a well-trained call agent will be able to resolve and respond to these emergency calls more quickly and effectively than before, saving valuable time and potentially lives. Additionally, the software provides feedback and allows practice whenever, wherever, so the public can remain confident in the phone operators for our national public safety service.

Overall, the talk Dr. Crock gave presented incredible insights into the industry from a first-hand perspective. He balanced well both career advice and the technical work his company does with the possible implications of the work one can do in the field, like with Call Simulator. The information in this report should showcase his talk and prove useful to those outside the field of data science, too.