Personal Statement
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I came to college intending to become a mechanical engineer, but the freshman chemistry class changed my mind. Learning about how the geometry of electronic orbits affects global chemical properties was fascinating. So, I did a research internship in a physical inorganic chemistry laboratory. I found myself interested in what was behind the powerful computational methods that I was using in my research. Whenever my calculations were running, I would pester my graduate student mentor to recommend reading in this direction. The coursework I took afterwards was geared towards theoretical chemistry, which necessitates an advanced understanding of quantum physics.

After my sophomore year, I did a research internship in a quantum chemistry group. I did not yet have the quantum mechanics coursework under my belt that would enable me to work on real quantum chemistry, so I was still performing simulations. But this time, I spent more time learning the intricacies of the computational methods that I was using.

In the middle of my junior year, I was diagnosed with leukemia and subsequently had a stroke. My cognitive faculties were left untouched, but I have motor deficits. I was initially bed-bound and could not communicate. Now, I use an assistive device, like a walker, to ambulate. My fine motor function is impaired for things like typing, and I have spastic dysarthria, which means that I have weakness in my articulators, a slower rate of speech, and difficulty changing pitch .

Following the stroke, I spent over four months hospitalized for acute rehab and chemo treatment. When I returned home, I was determined to be diligent with rehab on my own terms; I spent most of the first year back doing physical rehab full-time to become independent. Then, I discovered dictation. The ability to communicate without having to worry about the constraints of my fine motor impairment is exciting.

The only limit is that my computer does not always understand me. I frequently deal with dictation misrecognitions. For an hour each day, I do tongue twisters and then loop over a large set of phonetically-rich sentences for realistic practice. Throughout, I turn on a transcription application on my phone to get real-time feedback on how dictation software is rating my speech output.

The return to my passion, which is doing science, has been made possible by artificial intelligence. It powers my dictation software. I use the Copilot product of GitHub to make suggestions for me as I code. And I use ChatGPT for a variety of purposes, ranging from correcting typos in my raw dictation to helping me understand the program I am writing better. I am excited to put these tools to use once I return to Caltech in the fall of 2023 and beyond.

London is one of the most accessible cities in the world, and King's College is right in the heart of it. I envision my time at King's College as supplying me with an ideal environment to rehabilitate, while growing as a scientist, and enriching my knowledge of the UK and its people.