I live for the theoretical, the hypothetical, the what-if. The endless possibilities of theorizing, the profound knowledge of simulated experiments that just begs for further analysis is what personally draws me to computer science. My interest started the moment *Jeopardy!* champion Ken Jennings lost to IBM’s supercomputer, Watson, back in 2011; an unfathomably complicated combination of deep learning and Bayesian inference created a system capable of defeating a master at his own game. I became fascinated with the goal of one day working on a project that would have similar impact.

In my undergraduate studies, I have had the honor of researching with two distinguished faculty members. As I entered my second quarter, I started to work in machine learning with Dr. Carlos Guestrin to model user uncertainty in online data collection. Shortly thereafter I joined the mobile accessibility group with Dr. Richard Ladner to develop a braille typewriter for iOS called Perkinput. By working with both professors concurrently, I received a depth of exposure in their respective fields as well as a breadth of knowledge that spans the core areas of computer science. Exploring these projects with an inquisitive attitude led to a continuous learning experience that brought me well beyond the confines of the classroom.

Machine Learning Here

Research allows me to learn about topics that are never taught in the classroom; it enables me to explore the unknown, through application of the theoretical. While designing Perkinput’s nonvisual interface, I had to find a way to see what my users could not; I was forced to shift my own perspective so that I could develop a better product. The first version of Perkinput was incredibly difficult to use for someone who was blind. However, after several more iterations, I learned how to increase accessibility while maintaining the usability of eyes-free text entry. Generous use of Apple’s VoiceOver, a screen reader that is used by the visually impaired, ensures that the user knows and can interact with the state of the program at all times.

I received the Mary Gates Research Scholarship for my work on Perkinput and I plan to continue refining the app using feedback from users as a guide. I will be directly applying the skills I gained through this project at Google Research this summer, where I will be working with Dr. T.V. Raman to make Google Glass more accessible.

I cannot imagine life without challenge – I thrive from it. Whether I am designing an application for the blind or developing a new model for data collection, I strive to continuously learn and contribute my knowledge to the academic community. It is this process that continuously inspires and drives innovation in computer science.

---------------------------------------------- Thoughts -------------------------------------------------

One of my favorite moments was when I received access to the GRAIL cluster to build a dense relational graph for Dr. Guestrin. It is difficult to replicate the exhilaration experienced from commanding clusters of computers while in the comfort of my dorm room.

{Bridge}

This year I began work with Johan Ugander (a PhD candidate under Dr. Guestrin) to understand how variability in people’s uncertainty affects “wisdom of the crowd” mechanisms in online data collection.

{ML LEARNED HERE}

Pending countless LaTeX and analysis adjustments, this project will be my first publication to NIPS.