

I have recently become intrigued by the prevalence and impact that human-computer interaction has on everyday life because of my internship with Microsoft Research Asia. This spark of interest led me to sign up for an HCI course on Coursera where I learned about need finding, prototyping, visual design, and more. My interest continued to grow to the point where I am now hoping to immerse myself in the topic by getting a PhD in HCI from University of Rochester. I am in a unique position to offer this program a strong background in computer science and solid engineering skills, combined with two years of experience in artificial intelligence research.

During my recent internship, I worked in the Speech Group, but I participated in more than 10 user studies for the HCI group, and these studies are what first piqued my interest in HCI. For example, in one user study, I tested a restaurant recommendation application that uses natural language processing technologies to analyze customers' comments. Because of my AI perspective, I was able to think about how engineers could build intelligent interaction systems using AI techniques. When I developed an android app that recorded voice memos, I was able to incorporate both approaches by using a speech recognition engine and a searching interface to enable people to search voice memos by recognized keywords.

Most of my AI research experience was gained in the Speech Group where I have worked on two major projects. In my current project, which is an offline handwriting recognition project, I use the LSTM-HMM hybrid method to model human handwriting sequences. Our work is the first project Microsoft Research has taken on in trying to recognize unlimited cursive handwriting. Through this project, I have learned not only AI theory, but I have also gotten practical experience in image processing, pattern recognition, and machine learning. This knowledge and experience will be useful for understanding the backend mechanisms of AI techniques as they integrate with HCI research.

After two years of working under mentors who are well-known and respected in their fields, I have strengthened my engineering skills and become trained in good research culture and practice. I frequently present the progress of my projects in the Speech Group's weekly seminars and participate in giving others feedback on their research. I have learned best practices for experimental design and analysis, and for conducting paper surveys. In my audio visual speech recognition project, I perfected my engineering and programming skills by developing a DNN based recognition system. I also took time outside of work to hone my skills by developing an online programming judge website for CS department.

I am confident that my natural computer science ability combined with my AI experience will allow me contribute positively to the PhD program at University of Rochester. The PhD program offers courses that will complement the skill set I have already built. I would also like to use my background knowledge to contribute to Dr. Philip Guo's research on online education in any way I can. My goal is to gain a firm foundation in HCI by studying and doing research at University of Rochester so that I can day develop novel user interfaces that are smart and user-friendly.

Thank you for your consideration of my application.