

Statement of Purpose

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"First we build the tools, then they build us" said Marshall McLuhan, the philosopher from University of Toronto. Although his rhetorical words were too difficult to understand, I felt deep empathy for his some words explaining nowadays new media. The above one is a notable example which influenced my way of thinking. Numerous novel devices which come up every day show our endless desire for better tools. They has allowed more powerful and extended tools since WYSIWYG to Jinha Lee's WYCIWYW. Although some of early HCI research might look cumbersome and hinder our thoughts, through the ceaseless efforts of researchers, it is expanding its area than ever and bringing better tools to our daily life. As a computer scientist, isn't it natural for me to embark this heart-throbbing progress? I would like to participate to make the world better and make people happy rather than sitting back and watching how it is being advance.

To enhance our daily life, I focused on keyboard which we are used to and has relatively less development in research. Keyboard might be perfect to input characters, one of the human's greatest invention, however, we are experiencing the discomfort moving hand forward to the mouse and backward to the keyboard, since GUI era. Alan Kay devised the first mouse, turned out that it is very suitable to move because human has evolved as animals to use their foreleg. Since keyboard was the basic interface, lots of software provides cords which can be replaced by some clicks so that users can select either interface for some functions. Nevertheless, ordinary computer users experience difficulties with remembering cords, and they choose to use mouse, which cause physical and mental distraction. To solve this problem, I suggested IR-sensor based keyboard interface which enabled users to use several gestures instead of cords or mouse clicks. One similar research was conducted by MS Research in CHI 2014, but I optimized and implemented gestures in my master's thesis in 2011.

In addition, I experimented adding familiar tools to new devices. In Samsung Software Membership – an institute made by Samsung. It is similar to internship but students can conduct projects with their own ideas – I compromised pen-aided tablet interface. The pen was used as tools such as color pen and cutter. On the other hand, hand was used to move objects and rolled as an exceptional tool, ruler because we usually use ruler with pens or cutters at the same time. I and my team conducted user research to find better gestures, and matched the number of fingers used to functions. Two fingers are for ruler because we use it with more than one finger for instance. We also implemented stylus-mimicking hardware to enable simultaneous hand and pen input for a tablet. Because I had to the project along to the master's program, it was tough that is shown in lower grades. However, I believe it was a good experience to collaborative many other students from different fields.

I believe this user-centered approach was possible because I was interested in observing personals since I researched for my Bachelor's thesis. Its domain was spam filtering for blogs which seems a bit far of HCI. I hypothesized that the criteria of spams will be different from person to person. After conducting simple user researches, I concluded that the similar users can be clustered and can cooperate to filter spams up to their criteria.

These experience made me more confident at Samsung DMC UX Center. In my notable project, Smart Home, I could conducts a research for worldwide users and learned to get insights from it. Moreover, I had chance to make synergy between Samsung's many devices which is more focused by Professor Daniel Wigdor. In addition, Dynamic Graphics Project provides an ideal climate for me to develop my cross-disciplinary interests.

From these perspectives, I believe that I am ready for PhD program in DGP lab in University of Toronto. I hope fruitful discussions and advanced technologies at DGP would foster my research in HCI.