

Brief Article

The Author

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My objective is to pursue a Ph.D. degree in computer science, with a focus in Human-Computer Interaction (HCI). My research interests include educational technology, novel interaction experiences, design and gamification, etc.

I have my background more in math and theory: I participated in math and informatics olympiad in high school, and courses in my undergraduate institution focuses more on theoretical computer science. Theoretical research can provide foundations for a field, but has less direct impact on society when compared with other applied research. HCI is a field in which a lot of its research projects are more practical and have a more direct positive impact on people. My interest in HCI stems from this.

One of my aspiration is to create novel technology that assists people in education. During the summer of my junior year, I worked on a spatial training platform, "Cubicle", under the supervision of Prof. Wai-tat Fu in the Cascade Lab at UIUC. Cubicle is a visuospatial game aimed at training spatial skills of undergraduate STEM major students. Spatial skills are essential for STEM studies and careers, and my work address the problem of the low retention rate of current spatial training platforms (such as web-based workshops), and tries to find an approach that motivates students. I designed the game and led a group of four people on the development of the project.

Our project has shown to be quite effective in terms of motivating students and training spatial skills, and is currently in submission of IUI 2018 [1]. Our studies show that there is a positive correlation between students' spatial skills and their performance in the game, which implies our game is a reliable metric in terms of measuring spatial skills; it also shows that students' generally have a positive impression of our gamified approach.

Another attempt at utilizing gamification in education was during my spring semester of my junior year. I was a visiting researcher at Cornell working with Prof. Erik Andersen. I joined the development of "Reduct", a game aimed at teaching programming concepts to programming novices. Novices usually find self-learning a programming language hard and tedious, and my work tried to amend this by using a comprehension-based approach in teaching programming and by using gamified operational semantics. I add new functions and features to the game, designed and implemented levels that teaches programming concepts including strings, objects, recursion, etc.

Most recently I've been working in the Pervasive Computing Group at Tsinghua, lead by Prof. Yuanchun Shi and Prof. Chun Yu. ...

I am open to a wide variety of research within HCI, and my experience in building gamified applications has inspired an interest in building engaging and helpful systems that people can benefit from in their daily lives. More concretely, I am interested in applying such systems to areas such as education, machine learning (engaging systems for annotation tasks), assistive technologies etc.

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