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This blog hosts weekly news about the Texas A&M University Sketch Recognition Lab. SRL is directed by Dr. Tracy Hammond, an associate professor in the Computer Science and Engineering Department. More information about the lab can be found at <http://srl.tamu.edu>

Thursday, March 3, 2016

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SRL MS Thesis Defense: Purnendu Kaul, March 3, 2016, Gaze Assisted Classification of OnScreen Tasks and User Activities

SRL Thesis Defense:

Purnendu Kaul

Thursday, March 3

Title: Gaze Assisted Classification of On-Screen Tasks (by Difficulty Level) and User Activities (Reading, Writing/Typing, Image-Gazing)

Purnendu Kaul

12:30pm Thursday, March 3, 2016

323 Teague, CSE, TAMU

Abstract

Intelligent tutoring systems(ITS) are commonly used to indirectly assist classroom instructors by helping them deliver the learning material and assess students' progress as they learn. Today, such systems put the onus of asking for appropriate help on students, instead of assessing their needs automatically. This provides an opportunity to make systems which are capable of adapting to the cognitive states of students as they learn.

We have shown that Gaze-assisted human-computer interaction is a means of transforming these Intelligent tutoring systems (ITS) into more proactive and adaptive systems. A system with eye tracking capability can be trained to learn cognitive states of a user and offer contextual assistance. In this research, we conducted an experiment using Mechanix, a sketch based ITS system, that helps students learn how to solve truss problems.

Through this experiment, we investigated the possibility of using eye gaze data to classify problems being solved by students as difficult, medium, or hard. We also classify the activity being performed by users as "reading", "gazing at an image," and "drawing/typing." We only used those gaze features which can be calculated in real time, and are not dependent on the duration of activity on the system. The results show that gaze features can clearly differentiate between the activities with an accuracy of 94%, and classify the problems as easy, medium, or hard with an accuracy of more than 70%.

Biography

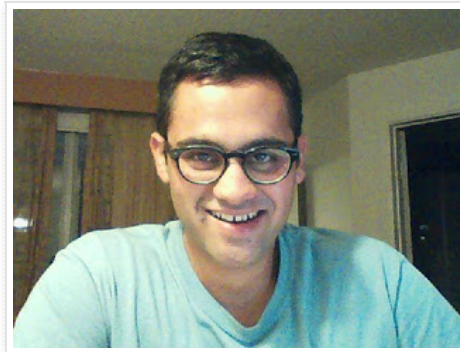
Purnendu is a masters student in the Sketch recognition lab. He completed his undergraduate degree at National Institute of Technology Kurukshetra, India and worked at the Indian Institute of Technology for a year before starting the graduate program at Texas A&M University. He was a summer software intern at Schlumberger Information Solutions in Houston during the summer of 2014.

Advisor: Dr. Tracy Hammond

Posted by [Tracy Hammond](#) at [12:00 PM](#)



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Congrats to Master Purnendu Kaul!
SRL Thesis Defense: Purnendu Kaul
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