Announcing the Final Examination of Travis Cossairt for the degree of Master of Science

Time & Location: March 27, 2012 at 11:00 AM in HEC 450
Title: SetPad: A Sketch-Based Tool For Exploring Discrete Math Set Problems

We present SetPad, a new application prototype that lets computer science students explore discrete math problems by sketching set expressions using pen-based input. Students can manipulate the expressions interactively with the tool via pen or multi-touch interface. Likewise, discrete mathematics instructors can use SetPad to display and work through set problems via a projector to better demonstrate the solutions to the students. We discuss the implementation and feature set of the application, as well as results from both an informal perceived usefulness evaluation for students taking a computer science foundation exam in addition to a formal user study measuring the effectiveness of the tool when solving set proof problems. The results indicate that SetPad was well received, allows for efficient solutions to proof problems, and has the potential to have a positive impact when used as both an instructional tool and as an individual student application.

Major: Computer Science

Educational Career:
Bachelor's of Computer Engineering, BS, 2001, University of Michigan

Committee in Charge:
Dr. Joseph LaViola, Chair, EECS
Dr. Hassan Foroosh, EECS
Dr. Charles Hughes, EECS

Approved for distribution by Dr. Joseph LaViola, Committee Chair, on January 18, 2012.

The public is welcome to attend.