



Thesis Defense

Computer Science Master's Program

“How Human vs. AI Chatbots Support Psychological Needs of Students”

By Tymon Vu

Abstract:

AI auto graders and virtual assistants are increasingly prevalent in educational settings. Although current literature demonstrates that AI chatbots can positively impact student motivation, there is little definitive evidence exploring whether these systems can replicate the effective motivational methods used by human teachers. Thus, in this experiment, we investigate how the perception of the identity of a tutor (AI versus human) impacts the psychological needs of students. 27 undergraduates taking introductory computer science courses were asked to explain code in plain English (EiPE). Participants received feedback from two tutors in within-subjects fashion: one human and one labeled as "AI". The "AI" tutor was actually the same human tutor. Quantitative trends indicate a preference for the human tutor across dimensions of autonomy, relatedness, and overall enjoyment. During interviews, participants reported a stronger connection with human tutors, feeling more understood, and experiencing greater freedom to converse. Conversely, the "AI" tutor was valued as a non-judgmental space for learning. Our findings highlight how not only content and accuracy of feedback shapes students' experiences, but also expectations. In addition, based on our findings, we suggest AI deployment guidelines based on situations in which AI chatbots vs human instructors are most useful.

Date: Wednesday, June 10th, 2026

Time: 4:00 PM – 6:00 PM

Location: 14-238b

Committee: Dr. Silas Hsu, Dr. Ayaan Kazerouni, Dr. Austin Wright

