REIMAGINING HOW PROGRAMMING ENVIRONMENTS CAN SUPPORT LEARNING

presented by

Thomas Price
North Carolina State University

Abstract:
Undergraduate enrollment in Computer Science (CS) programs has tripled in the past decade, but CS majors face high failure rates and the highest attrition rates of any STEM field. This talk will explore how programming environments can leverage data-mining, AI and our knowledge of human-computer interaction to create better educational experiences for computing students. I will discuss two effective techniques for supporting novice programmers, block-based programming and data-driven feedback, and demonstrate iSnap, the first programming environment that combines both. I will present results from two evaluations of iSnap that inform our design of programming support systems and our understanding of computing education. The talk will conclude with a discussion of how advances in data-driven feedback can support more innovative and open-ended programming assignments.

Bio:
Thomas Price is a PhD Candidate at North Carolina State University, working in the Center for Educational Informatics. Thomas’ research focuses on building technology that adaptively supports students as they learn to program through creative, open-ended assignments. He works to understand how students seek and use help when programming and what role a computer should play in that process. Thomas’ other research projects have included an evaluation of professional development for K-12 Computer Science teachers, an intelligent tutoring system for probability, and an educational game on the history of Lebanese immigration to the U.S. Thomas has also served for two years as co-president of STARS at NC State, an organization which works to broaden participation in computing through CS outreach, peer tutoring and community building.