Modeling students' procrastination in university classrooms

Tianchen Sun
Ph.D. Candidate
Industrial and Systems Engineering
University of Washington

Abstract: Students spend little time completing tasks when deadlines are far off; however, they tend to increase their work amounts as deadline approaches. This phenomenon, which is called deadline rush, can be modeled by exponential distributions. Deadline reactivity, represented by a rate parameter of the exponential distribution, parameterizes individual differences in procrastination. That is, an individual with high reactivity to deadlines procrastinates more than an individual with low deadline reactivity. While the phenomenon and parametric models of individual differences in procrastination have been investigated, practical applications in the classroom setting have garnered little attention from researchers. Past research on procrastination has not much considered its relationships with learning environment factors and performance, with a lack of objective measurements and heavy reliance on self-reported questionnaires. This work will respond to this gap in the research by modeling students' individual procrastination in university classroom settings, paying close attention to factors influencing the students' procrastination as well as the effects of procrastination on performance. In particular, we will answer the following three research questions: (1) Do learning environments (i.e., online learning, task complexity) affect students' procrastination? (2) Does procrastination affect individual and team performance? and (3) How can procrastination be measured quantitatively through physiological data (eye gaze, heart rate, and galvanic skin response)? Our findings will shed light on how objective measurements of procrastination can be applied in the classroom setting. In particular, the findings will provide instructors and researchers with practical strategies to better design class logistics and interventions by considering the learning environment factors and variations in procrastination among students to improve students' individual and team performance.

Bio: Tianchen Sun is a Ph.D. candidate in the Industrial and Systems Engineering department at the University of Washington. He is currently working in Dr. Ji-Eun Kim's Human and Systems (HAS) lab. His research focuses on human factors, with specific interests in human performance modeling, neuroergonomics, and human-computer interaction in the cyberlearning domain. Prior to his Ph.D. study, he received a Bachelor's degree in Industrial and Management Engineering from Rensselaer Polytechnic Institute and a Master's degree in Industrial and Systems Engineering from the University of Washington.