



Mashfiqui Rabbi

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Friday, November 8th

Newell-Simon Hall, 1305

1:30-2:30pm

Host: Mayank Goel

Computational Interventions for Behavior Change

In the US, unhealthy behaviors—such as sedentary lifestyle, overeating, substance use, and tobacco use—account for approximately 40% of the risk of premature deaths. While successful changes to these unhealthy behaviors can mitigate the risk of harm, behavior change is often difficult because of high self-management burden. Fortunately, mobile phones can reduce the burden of self-management because they can deliver the right intervention at the right time by using data-capture and computational capabilities of the phone.

Creating such just-in-time interventions, however, is a complex multi-disciplinary challenge. I work in two areas of just-in-time interventions. First, I design new therapeutic interventions that use fine-grained mobile data and AI. These therapeutic interventions use novel computational algorithms and mobile data to dynamically personalize interventions to the individual in ways that were previously unachievable (e.g., relating treatments to one's daily routine). Another area I work on is engagement interventions, where the goal is to keep people engaged in frequent data collection both to advance science in behavior change as well as to sense individual states to send timely interventions. Engagement interventions are critical in mobile health because most people stop using health apps after only a few days. In this talk, I will present one novel therapeutic intervention and one engagement intervention. MyBehavior is a novel therapeutic intervention that provides personalized and low-burden suggestions to improve physical activity and dietary intake. SARA is an engagement intervention that optimizes timely incentives to increase the self-reporting of substance use data from a youth population. After discussing MyBehavior and SARA, I will outline my future plans to make more effective therapeutic/engagement interventions and my long term vision of creating behavior change interventions for mental health.

Mashfiqui Rabbi is a postdoctoral fellow at Harvard University, where he is working with Professor Susan Murphy. Prior to his postdoc, he received a Ph.D. in Information Science from Cornell University. His Ph.D. advisor was Professor Tanzeem Choudhury. Mashfiqui's Ph.D. thesis created the MyBehavior app, which is the first mobile recommender system to automatically generate personalized physical activity and food suggestions from mobile phone data. Mashfiqui's work was also featured in MIT technology review, New Scientists, the Economist, Mashable and NY Times. Mashfiqui has received several grants from Cornell University, University of Michigan, and Pennsylvania State University for his work.