Other - CCTAILS - CCT's AI Lecture Series

AEPsych: a platform for live human-in-the-loop experimentation

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Zoom/Digital Media Center for Viewing Zoom/Theatre
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Abstract:

Note: This lecture will be presented via zoom and available for viewing in the Digital Media Center Theatre.

Zoom link: https://lsu.zoom.us/j/92760419250
Zoom password: 116287

Human binary choice data (e.g. yes/no, better/worse) is widely used in the study of human perception and preferences. Notable examples include psychophysics (studying how the brain maps external stimuli to internal representations, in psychology), value-based decision making (studying how humans assign utility to items, in economics) and preference learning or optimization (uncovering human preferences or optimizing stimuli based on them, in machine learning). AEPsych (aepsych.org/) is a platform for model-based experimentation and active learning in such domains, built both for ML researchers to benchmark and test their models, and for experimentalists to integrate those models with real studies. It allows a predictive model, typically based on Gaussian Processes to be used during an experiment to adaptively select informative stimuli to sample via an acquisition function (similarly to Bayesian Optimization). I will describe the overall design of AEPsych, as well as a number of modeling and algorithmic advances we made as part of its development to enable orders-of-magnitude sample efficiency gains on real experiments performed with human participants.

Speaker's Bio:

Mike Shvartsman is a research scientist and manager at Meta Reality Labs Research, where his team works on novel applications of statistics and machine learning that enable the future of augmented and virtual reality. His current primary research interest is in sample-efficient modeling and optimization, with primary application focus on understanding the human mind and brain. Previously, Mike worked on models of decision making and high-dimensional neural data as a postdoc at Princeton, and computational psycholinguistics during his PhD at the University of Michigan.

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