CSCI 5822: PROBABILISTIC MODELS
GUEST LECTURE (ON ZOOM)

"Probabilistic learning in humans and recurrent neural networks"

We constructed and trained a biophysically constrained recurrent neural network (RNN) model to perform a series of probabilistic decision-making tasks similar to paradigms designed for humans. Our results showed that both humans and RNNs extracted information about stimulus probability and integrate this knowledge into their task strategies in a new sensory environment. Specifically, the performance of both humans and RNNs varied with the degree to which the stimulus probability of the new environment matched the formed expectation. In both cases, this expectation effect was more prominent when the strength of the sensory signal was low, suggesting that like humans, the RNNs placed more emphasis on prior expectation (top-down signals) when the available sensory information (bottom-up signals) was limited, thereby optimizing behavior.

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Hosted by Tzu-Chi Yen (5822 TA)

Friday, April 28th
11:15 a.m. to 12:05 p.m.
https://cuboulder.zoom.us/j/98891128626
(Password: probmods)