

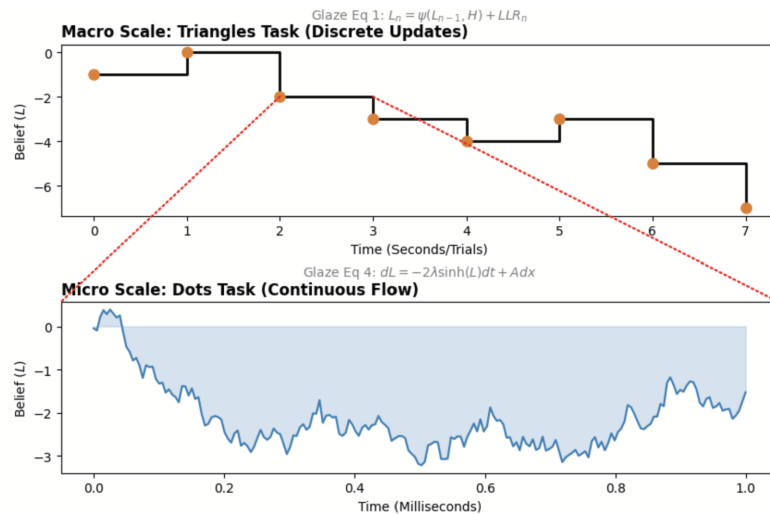
Continuous Normative Model for decision-making?

Seminar: Models of Learning and Decision Making in Changing Environments
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University of Osnabrück
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Motivation and Research question

- Normative models
 - Updates beliefs L_n based on hazard rates h and log-likelihood LLR_n .
 - Beliefs reflect confidence of choices (*left, right*).



Research question:

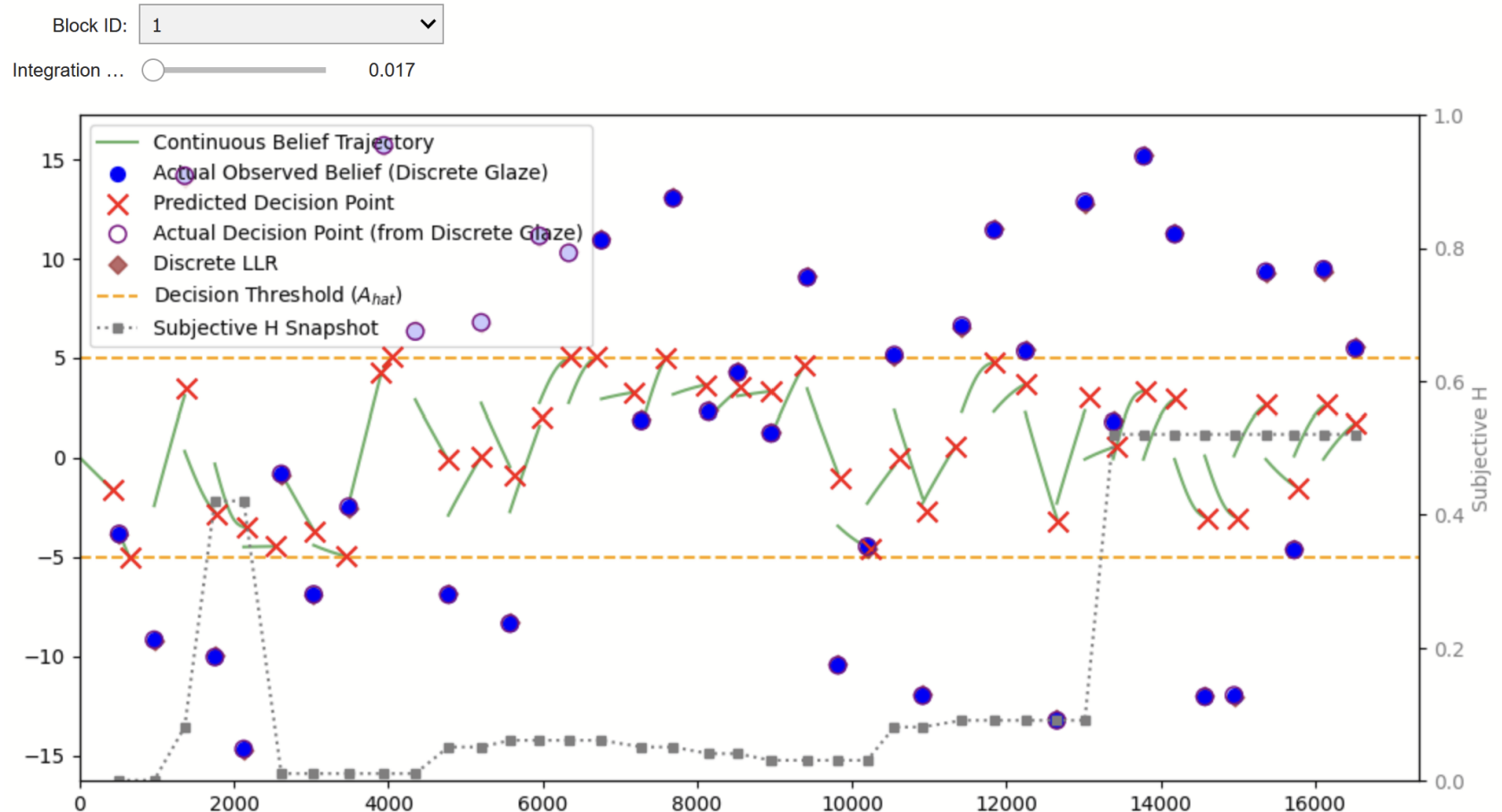
- Can the continuous normative model (CNM) predict the reaction times RT of participants in the triangle task?

A schematic: *CNM* on the triangle task?

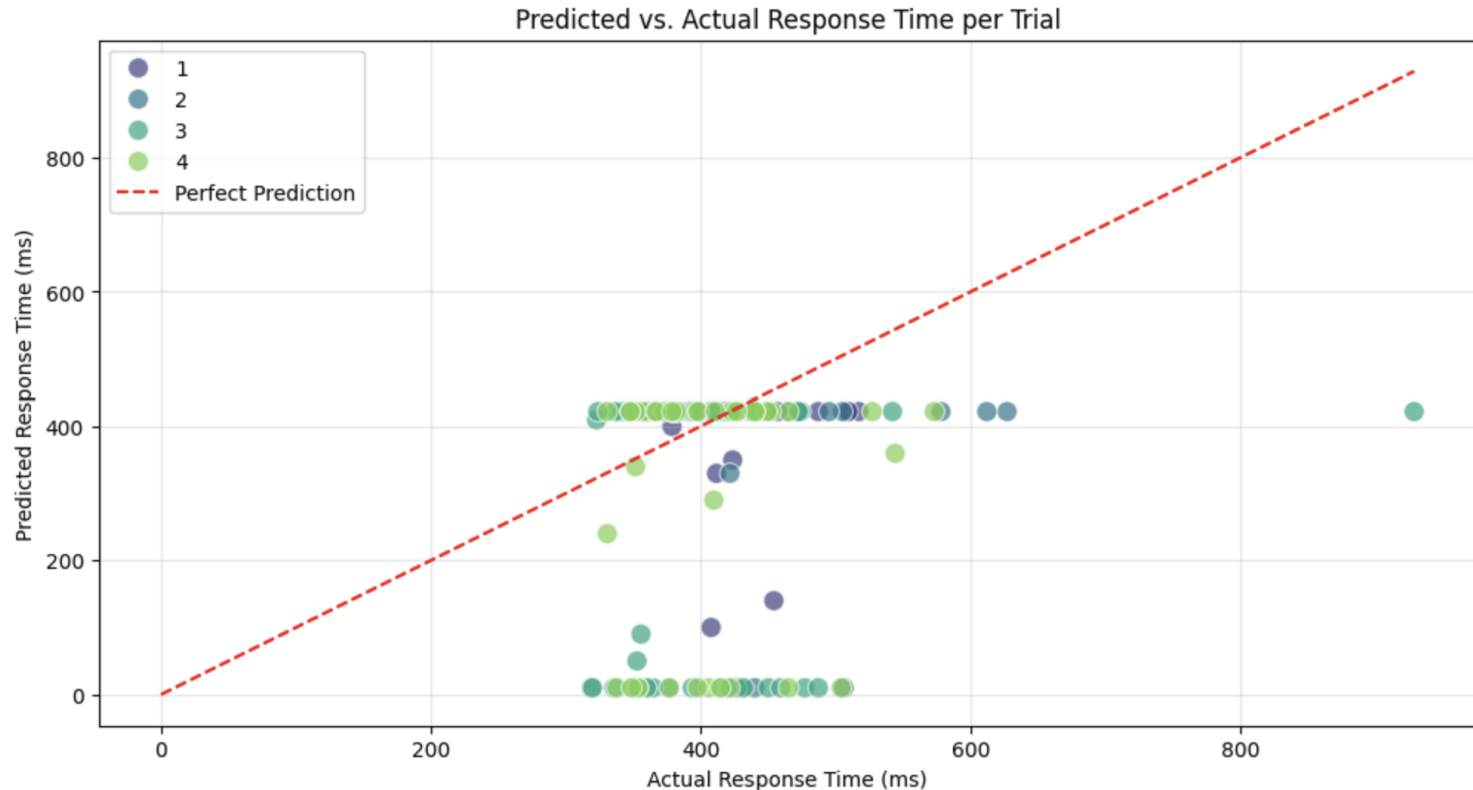
Preliminary results

Defining a decision-threshold

Decision-threshold: globally, min distance of predicted RTs and RTs: $\min(p_{RT} - \hat{p}_{RT})$

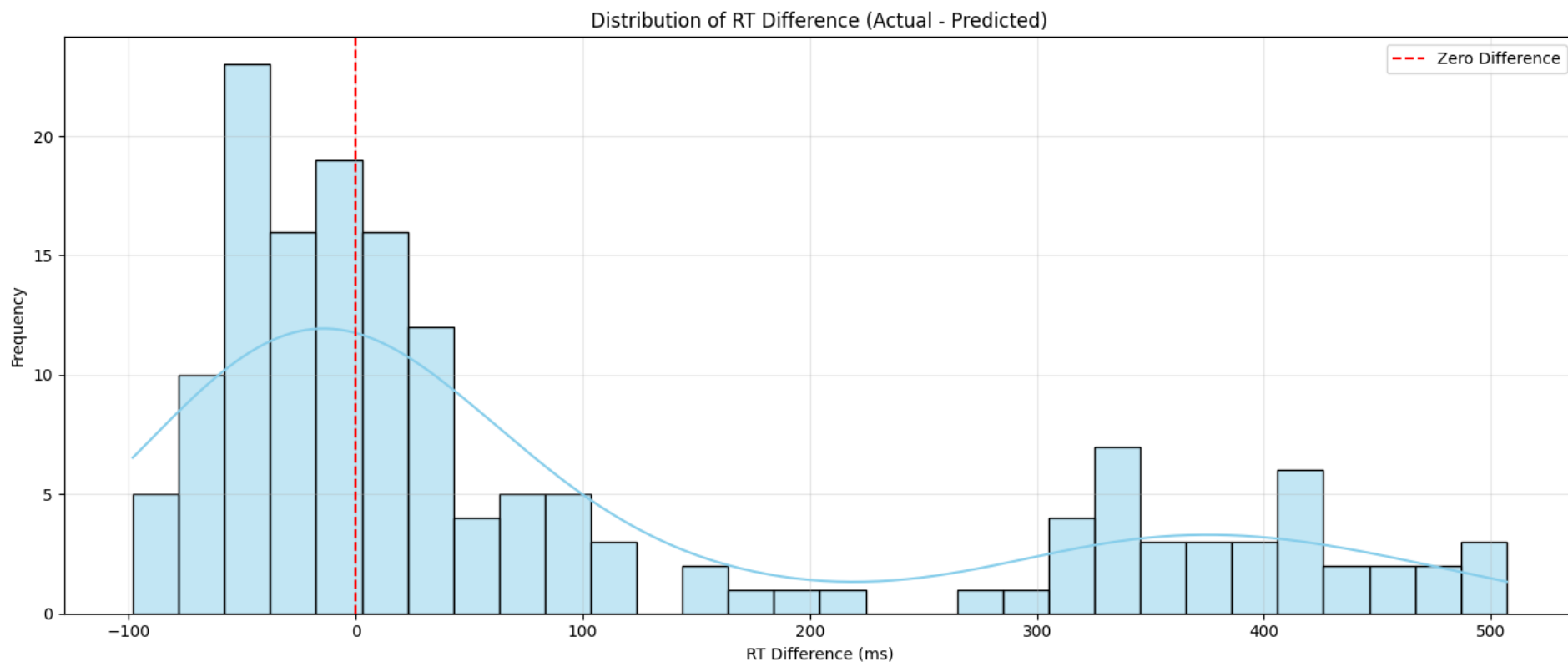


Does it work? Maybe soon...



- **CNM often runs into timeout (=410ms):** Decision-threshold is defined globally, hazard rate restraints exceeding decision-threshold.
- **CNM often declares decision at (0ms):** Currently, $DNM(n)$ feeds directly into $CNM(n)$
- **No splitting** of LLR_n and $\lambda_n = f(h_n)$

Distribution of $RT - \hat{RT}$



Sources

- All figures were created by us.
- Paper: Christopher M Glaze, Joseph W Kable, Joshua I Gold (2015) Normative evidence accumulation in unpredictable environments eLife 4:e08825
- Code: [Glaze repo](#)

Thanks for your attention!

Questions?