

# Inferring Individual Goals Using Inverse Reinforcement Learning

**Submission ID** 3000269  
**Submission Type** Poster  
**Topic** Artificial Intelligence  
**Status** Submitted  
**Submitter** Kelsey McDonald  
**Affiliation** Duke University

## SUBMISSION DETAILS

**Presentation Type** Either Poster or Oral Presentation

**Presentation Abstract Summary** Most decision tasks in cognitive neuroscience have relied on simplified paradigms with discrete state spaces and known optimal solutions. However, most real-world decisions involve large state spaces and unknown optimal behavior. Taking an inverse reinforcement learning approach, we used generative adversarial networks to successfully estimate the latent goals of humans playing a competitive task taking place in a continuous state space. We show that our model produces sample behavior capturing the rich dynamics of individual players. Inferring the latent goal dynamics of individual subjects allows us to model dynamic, individualized, and trial-specific estimates of subjective value, with implications for the study of individual differences in neuroscience.

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## Co-author Information

\* Presenting Author

First Name	Last Name	Affiliation	E-mail
Kelsey *	McDonald *	Duke University	krm58@duke.edu
Shariq	Iqbal	Duke University	sni@duke.edu
Scott	Huettel	Duke University	scott.huettel@duke.edu
John	Pearson	Duke University	john.pearson@duke.edu

## Keywords

Keywords
inverse reinforcement learning
neural networks
individual differences

decision making