



# PsychoViz: Integrated Psychophysiological Processing and Analysis

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## Introduction

Our study investigates the physiological correlates of trust and decision making, thus requiring large scale data analysis. For this reason, we have developed PsychoViz, a browser-based data processing and visualization tool.

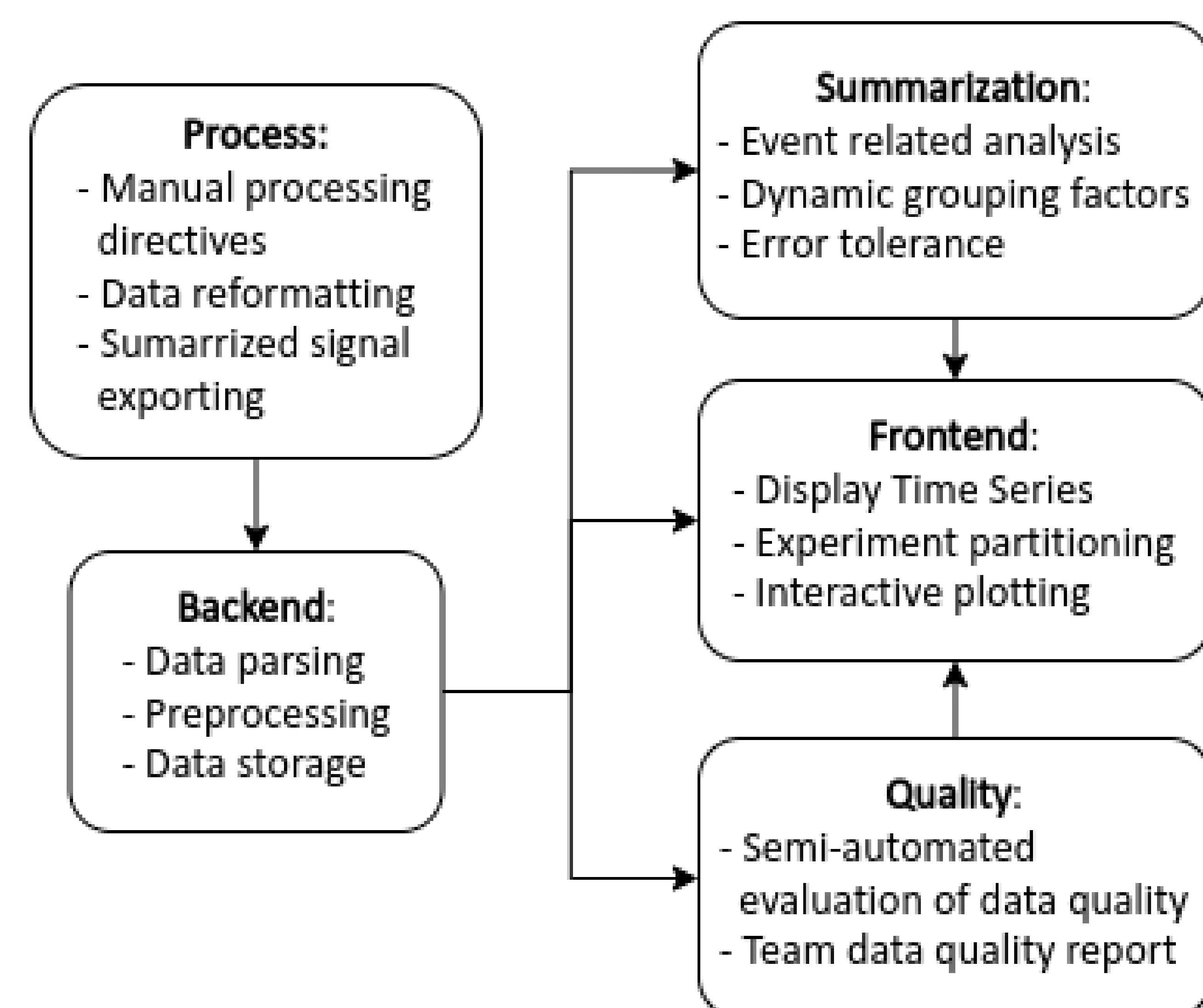
### PsychoViz capabilities include:

- Viewing and preprocessing various data in one place
- Derivative signal processing (e.g., RSA, SCL, SCR, HR)
- View summary data and quality reports
- Display and export interactive data figures
- Easy data sharing and accessibility

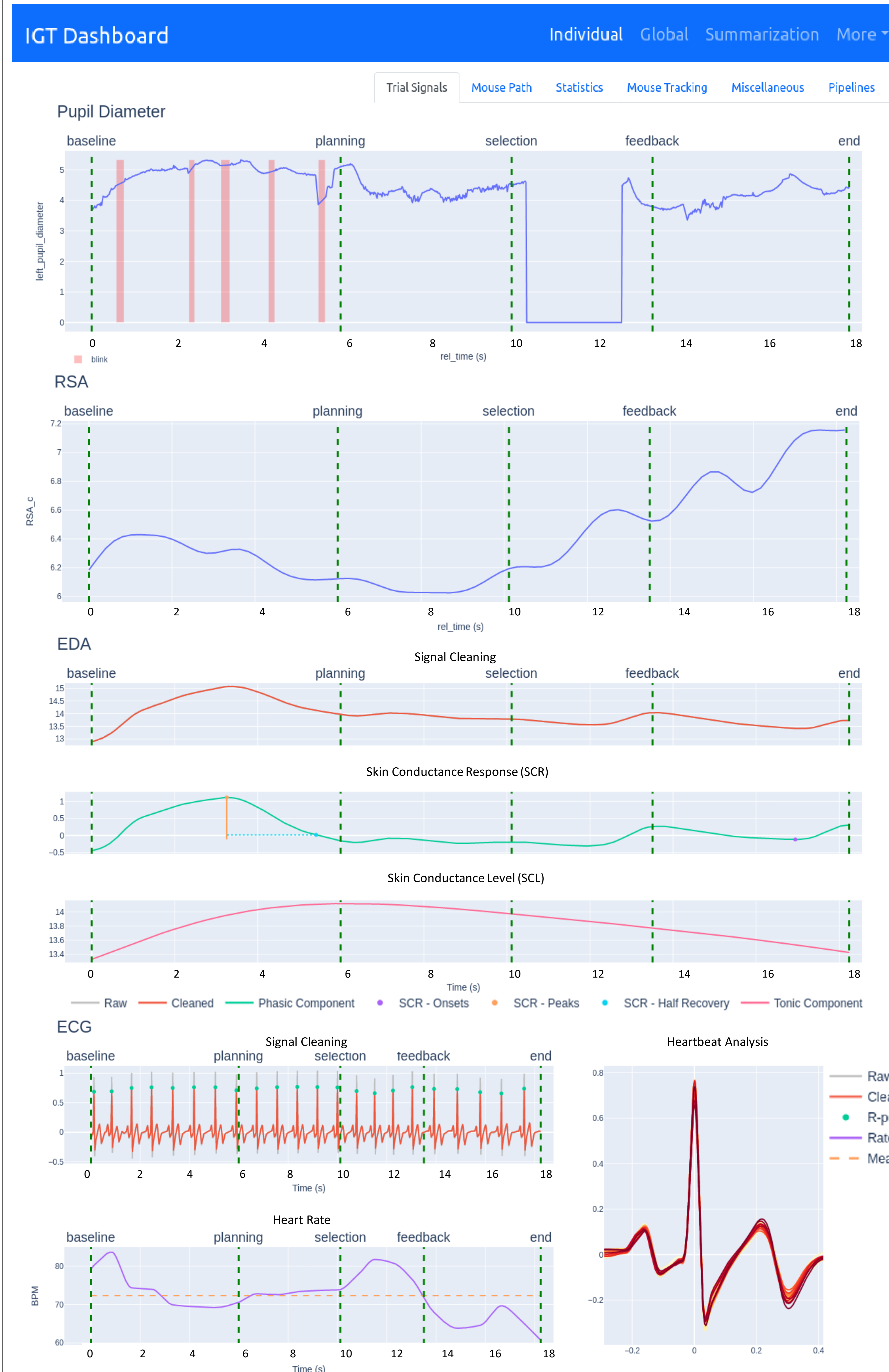
**Task:** The Iowa Gambling Task simulates situational trust and decision making. Using PsychoViz, we can test systematic relations between autonomic nervous system (ANS) functioning and decision making.

## Methodology

PsychoViz is architected around a flexible module-based structure. This allows for users to customize the dashboard to meet their specific scientific needs.



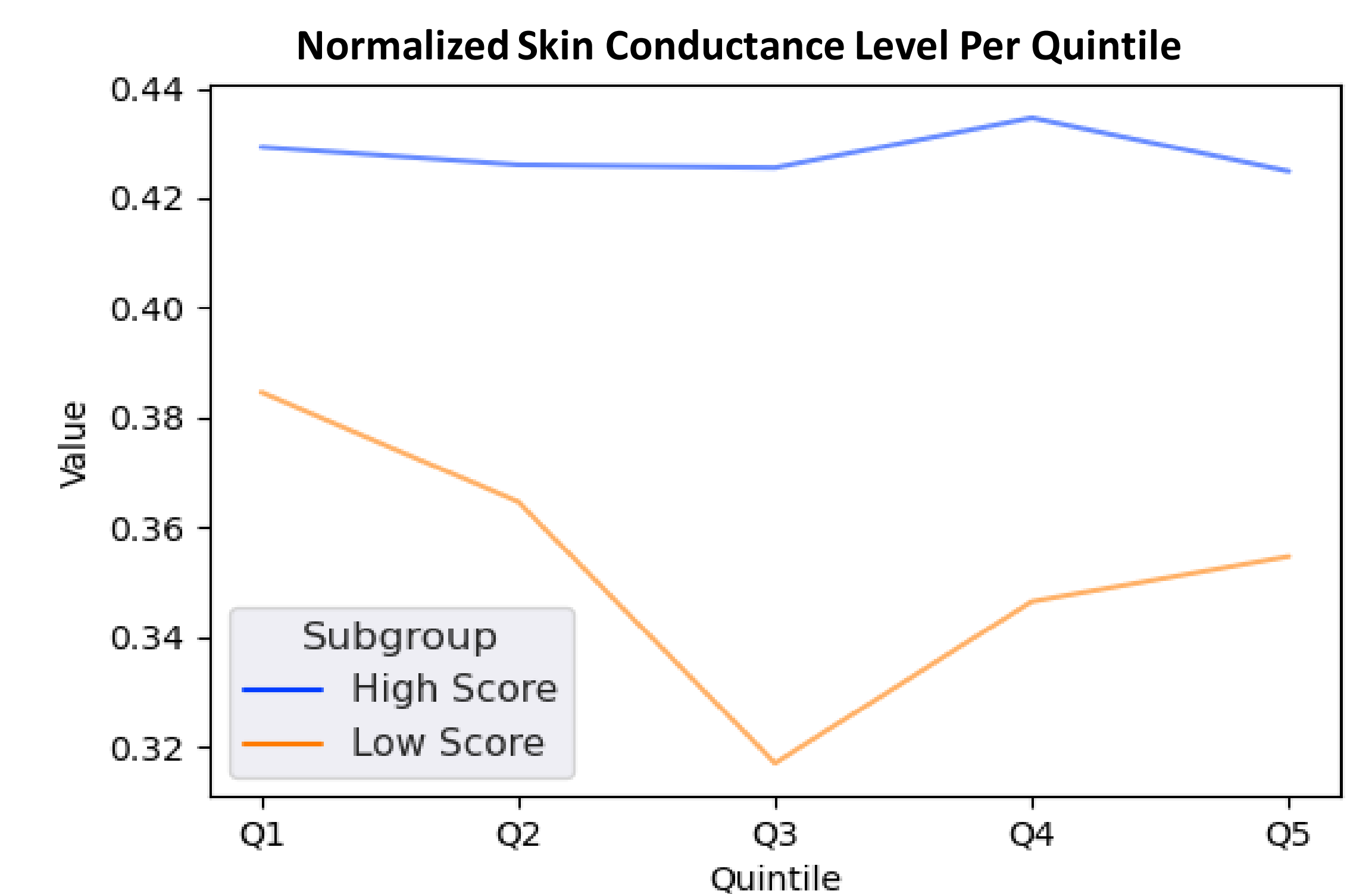
## PsychoViz



## Applications

- **Pupil diameter:** dilation mediated by SNS; constriction mediated by PNS
- **Respiratory sinus arrhythmia (RSA):** measures parasympathetic control of heart rate
- **Electrodermal activity (EDA):** measures sympathetic activity via sweat gland conductance
- **Electrocardiogram (ECG):** electrical sig. from heart beats

Using the dashboard, we can answer questions such as, "How does skin conductance vary as a function of learning and experience?"



## Conclusion & Future Directions

Using the Dashboard, we can rapidly test hypotheses about systematic relationships between physiological responses. We will continue to develop the usability of the Dashboard so that it can work with additional physiological & behavioral measures.

**References:** Sources and code can be found at the provided link. [https://github.com/bci-fnir/trusting\\_ai](https://github.com/bci-fnir/trusting_ai)



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