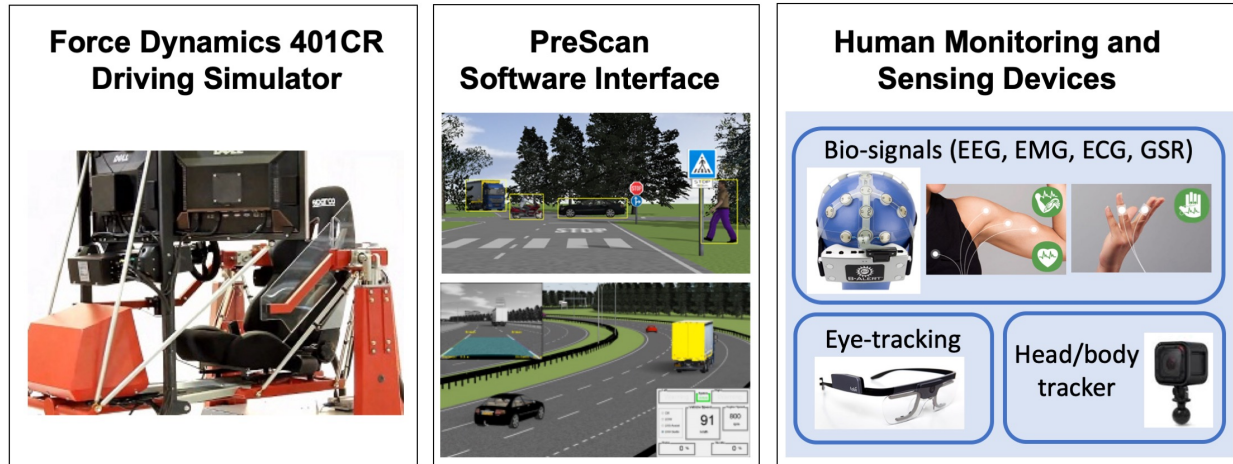# CRII: CPS: Cognitive Trust in Human-Autonomous Vehicle Interactions

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- [Poster: Thursday, November 15, 5:00pm - 7:00pm, #269]

Description

To understand the role of trust within human-autonomous vehicle interactions

Goals of This Project:

- *Sensing and quantitative modeling of cognitive trust*: How to measure and quantify trust, and how to mathematically model its evolution?

- *Formal specification and verification of cognitive trust*: How to express trust properties in formal specifications, and reason about (verify) such specifications to evaluate trust?

- *Explainable design for cognitive trust*: How can we explain trust-based decisions, and design an autonomous system that establishes trust?

Findings

- Conducted a literature survey on factors that influence human's trust on autonomous vehicles
  - Trust changes dynamically over the interaction process
  - System reliability, timing of errors, difficulty of errors
  - System transparency, feedback, etc.

- Designed and conducted human subject experiments with a driving simulator to validate and quantify the influence of these factors

- Develop a mathematical model of trust based on multimodal sensing data

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