

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

Award #1755784 (4/1/2018 – 3/31/2022)

Lu Feng, University of Virginia

### Challenge:

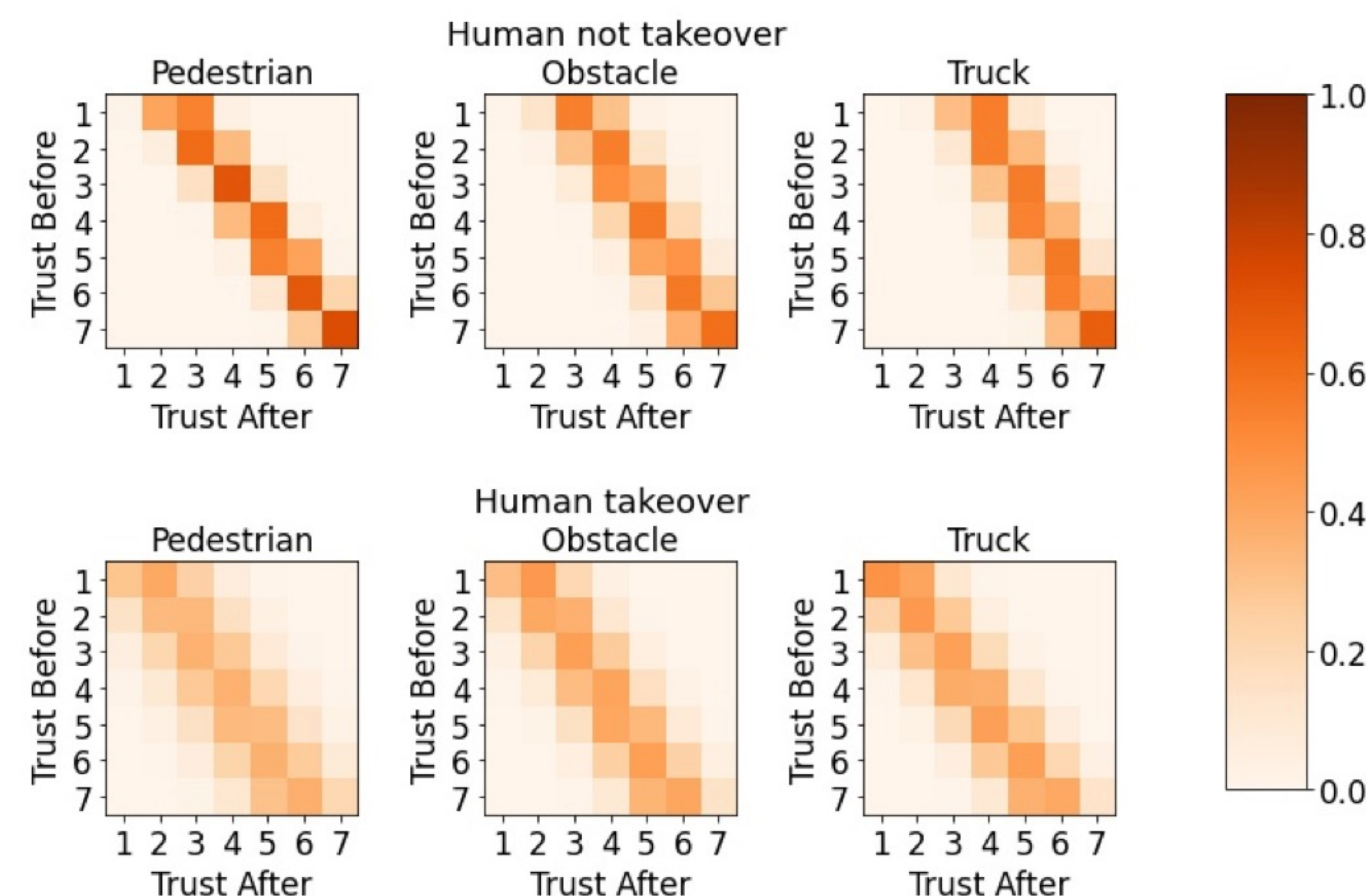
- How do we measure and quantify trust, and mathematically model its evolution?
- How do we explain trust-based decisions, and design an autonomous system that establishes human trust?

### Scientific Impact:

- Develop methods for formally expressing and reasoning about trust in human-CPS interactions

### Solution:

- Trust-based route planning for automated vehicles [ICCPS'2021]
- Contrastive explanations for MDP planning [IROS'2020]
- Personalized explanations via user feedback [IROS'2021 submission]



### Broader Impact:

- Potential to improve safety, increase user trust and acceptance
- Develop new CPS graduate course