THEATRE OF THE CAR

Stanford University Center for Design Research
Wendy Ju, Executive Director of Interaction Design
We are designing how people will interact with the vehicles of the future.

We are performing research on shared control with automation, the emotional experience of automated driving, and the opportunities for learning and adaptation in the cars of tomorrow.
RESEARCH TEAM

- Rebecca Currano, PhD
  Mechanical Engineering Post-Doc
- Leigh Hagsted
  Master’s student in Computer Science
- Mishel Johns
  Mechanical Engineering PhD Candidate
- Barbara Karanian, PhD
  Research Staff
- Jamy Li
  Communication PhD Candidate
- Nik Martelaro
  Mechanical Engineering PhD Candidate
- Dave Miller
  Communication PhD Candidate
- Brian Mok
  Mechanical Engineering PhD Candidate
- Pablo Paredes, PhD
  Computer Science Post-Doc
- Chris Ploch
  Mechanical Engineering PhD Candidate
- Rob Semmens
  Learning Sciences and Design PhD Candidate
- Srinath Sibi
  Mechanical Engineering PhD Candidate
- David Sirkin, PhD
  Research Staff
- Catherine Smith
  Master’s in Mechanical Engineering
- Hamish Tennent
  Design MFA
- Peter Wang
  Master’s student in Chemical Engineering

Updated 4/12/2016
• Renault Silicon Valley
• Bosch Autonomous Technologies Research Group
• Toyota Research Institute
• Ford Silicon Valley
• Faurecia
• Fiat/Chrysler
• Panasonic

Updated 4/11/2016
A CENTRAL CHALLENGE OF DESIGNING INTERACTIONS FOR THE FUTURE IS OVERCOMING THE LIMITATIONS OF THE PRESENT
R.U.R. (ROSSUM’S UNIVERSAL ROBOTS) by KAREL ČAPEK (1920)
TRANSITION FROM AUTOMATION
Johns, M., et al. The Driver has Control: Exploring Driving Performance with Varying Automation Capabilities. Driver Assessment 2015, June, Salt Lake City UT.

Miller, D. et al. Exploring Transitional Autonomous Driving with New and Old Drivers. SAE World Congress 2016, April 2016, Ann Arbor MI.
Participant Performance in 2, 5, or 8 sec. Conditions

THE THEATRE OF THE CAR LETS US UNDERSTAND HOW PEOPLE WILL BEHAVE, RESPOND AND FEEL.
UNSTRUCTURED TRANSITION
EMOTION CODING
BY PUSHING THE BOUNDS OF OUR THEATRE, WE ARE EXPANDING THE BOUNDS OF DISCOVERY.
Behind the scenes, real-time monitoring and control over course, voice interface and dash elements enable improvised interaction.
ON-THE-ROAD DRIVING SIMULATOR

Participant “Driver”

Driving Wizard

Interaction Wizard
PEDESTRIAN INTERACTION

A field study investigating the interaction between pedestrians and driverless vehicles

Theatre has the power to give us alternative realities and insight into our present.
NEEDFINDING MACHINES
THANKS

Wendy Ju
wendyju@stanford.edu
Center for Design Research
Stanford University