



September 14, 2017 - Toyota Annual Review 32-G449-Patil

- 8:30-9:00am Arrival, breakfast
- 9:00-9:10am Welcome, introductions
- 9:10-9:30am TRI Perspective
Gill Pratt, Chief Executive Officer, Toyota Research Institute
- 9:30-9:50am CSAIL Projects overview
Daniela Rus, Director, CSAIL

DRIVING

- 9:50-10:05am A Parallel Autonomous Driving System, Daniela Rus, Sertac Karaman
Title: Parallel Autonomy with Dynamic Models and Probabilistic Path Envelopes
Presenter: Daniela Rus
- 10:05-10:20am Decision Making for Parallel Autonomy in Clutter, Daniela Rus, Sertac Karaman
Title: Decision Making Informed by Clutter and Verifiable Constraints
Presenter: Daniela Rus
- 10:20-10:35am Tools and Data to Revolutionize Driving, Daniela Rus, Sertac Karaman
Title: Learning and Control for Parallel Autonomy and Mapless Driving
Presenter: Sertac Karaman
- 10:35-10:50am WiFi Based Obstacle Detection for Robot Navigation, Dina Katabi
Title: Driverless Cars that See Through Fog Snow and Occlusions
Presenter: Dina Katabi
- 10:50-11:15am BREAK
- 11:15-11:30am Driver-Friendly Bilateral Control for Suppressing Traffic Instabilities, Berthold Horn
Title: Inverse Time-to-Contact as Proxy for Accident Probability
Presenter: Berthold Horn
- 11:30-11:45am Geordi - A Driver's Assistant for Risk-Bounded Maneuvering, Brian Williams, Andreas Hofmann
Title: A Driver's Assistant for Risk-Bounded Maneuvering
Presenter: Andreas Hofmann

11:45-12:00pm Uhura - A Driver's Personal Coach for Managing Risk, Brian Williams, Tiago Stegun Vaquero
Title: Uhura - A Driver's Personal Coach for Managing Risk
Presenter: Andreas Hofmann

12:00-1:00pm LUNCHEON- Star Seminar Room 32-D463

PERCEPTION - LANGUAGE

1:00-1:15pm Uncovering the Pain Points in Driving: Ruth Rosenholtz, Fredo Durand, Bill Freeman, Aude Oliva, Antonio Torralba
Title: Understanding the Road and Understanding the Driver
Presenter: Bill Freeman

1:15-1:30pm Crossing the Vision-Language Boundary for Contextual Human-Vehicle Interaction: Jim Glass
Title: Crossing the Speech/Vision Boundary
Presenter: Jim Glass

1:30-1:45pm Drinking from the Visual Firehose: High-Frame-Rate, High-Resolution Computer Vision for Autonomous and Assisted Driving: Saman Amarasinghe, Fredo Durand
Title: TACO Tensor Algebra Compiler
Presenter: Saman Amarasinghe

1:45-2:00pm Using Vision and Language to Read Minds: Nick Roy, Boris Katz
Title: Language Understanding with Accrued Visual-Linguistic Context
Presenter: Nick Roy

2:00-2:15pm Predicting a Driver's State-of-Mind: Antonio Torralba, Wojciech Matusik
Title: Predicting a Driver's State of Mind
Presenter: Wojciech Matusik

2:15-2:30pm Exploring the World of High Definition Touch: Ted Adelson
Title: Exploring the World of High Definition Touch
Presenter: Ted Adelson

VERIFICATION - VALIDATION

2:30-2:45pm Formal Verification Meets Big Data Intelligence to Address the Trillion Miles Challenge: Armando Solar-Lezama
Title: Formal Verification Meets Big Data Intelligence to Address the Trillion Miles Challenge
Presenter: Armando Solar-Lezama

2:45-3:00pm The Car Can Explain: Gerry Sussman, Hal Abelson, Lalana Kagal, Daniel Weitzner
Title: When Things Go Wrong
Presenter: Gerald Jay Sussman

3:00-3:20pm

BREAK

3:20-3:35pm

Simulation and Verification for Vision-in-the-Loop Control: Fredo Durand, Aleksandar Zlateski

Title: Computer Graphics for Perception and Learning

Presenter: Fredo Durand

3:35-3:50pm

Analysis by Synthesis Revisited: Visual Scene Understanding by Integrating Probabilistic Programs and Deep Learning, Josh Tenenbaum

Title: Visual Scene Understanding by Integrating Probabilistic Programs and Deep Learning

Presenter: Josh Tenenbaum

3:50-4:15pm

Wrap-up Discussion

4:15-5:30pm

Reception with Demos and Poster Session - R&D Commons and Star

5:00-6:00pm

SAB will be meeting in Bleil 32-G601

