Panel: When will my car drive me to work?

Organizer: Professor Ali Niknejad, UC Berkeley

Symposium Chair: Yiorgos Makris
Poster Session Chairs:
Naofal Al-Dahir, Kanad Basu and Sam Shichijo

October 17, 2022

TEXAS ANALOG CENTER OF EXCELLENCE
Fun Driving vs Reality
The Dream...

Self-driving cars that allow drivers and occupants to relax during journeys are not as close to launching as optimists had hoped.

Thank you DARPA!

At the break of dawn on March 13, 2004, 15 vehicles left a starting gate in the desert outside of Barstow...
Levels of autonomy

https://accoladetechnology.com/5-levels-of-autonomy-l1-and-l2/
Self-Driving Cars Put Safety First

Will letting a robot do the driving mean we program our way to error-free transportation?
Moral Dilemmas:

Play this killer self-driving car ethics game

Josh Constine  @joshconstine  /  4:18 PM PDT • October 4, 2016

What should the self-driving car do?

Should a self-driving car full of old folks crash to avoid puppies in the cross-walk? Is it OK to run over two criminals if you save one doctor? Whose lives are worth more, seven-year-olds or senior citizens?

https://techcrunch.com/2016/10/04/did-you-save-the-cat-or-the-kid/

“Corner” Driving Conditions

Photo from tehran24.com

**Good god!**
Anatomy of urban chaos

By Farhad Radmehrian

Morning rush-hour traffic in Jakarta, Indonesia, is shown here. Gridlock this tight could paralyze a driverless car. Credit: Supri/Reuters

https://www.sciencefriday.com/articles/driving-in-some-cities-is-a-blood-sport-can-autonomous-cars-compete-pc/
Urgently Needed: Sensors!

Research in Autonomous Driving – A Historic Bibliometric View of the Research Development in Autonomous Driving

Sensor Fusion

Fig. 1: Sensor fusion. Source: Synopsys

Other sensors: Audio, MIMO/SAR Radar, multiple cameras, ...
AI/ML?

GPU/CPU on wheels?

Do we need a “5G” network? A smart city?

The Key to Autonomous Driving: The 5G Network
Aug 10, 2017

https://www.unicomengineering.com/blog/the-key-to-autonomous-driving-the-5g-network/
V2V Communication?

https://www.giwhub.org/infrastructure-technology-use-cases/case-studies/vehicle-to-vehicle-v2v-connectivity/