

A social science perspective on Artificial Intelligence

Erik Vinkhuyzen

Nissan Research Center Silicon Valley

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Studying Artificial Intelligence in the Wild

- Using video ethnography to study how technology affects work practice
- Expert systems for diagnosing copiers
- System had the diagnostic knowledge
- AI reasoned about the input that users provided
- Finding: *Technicians quickly learned to provide answers that got them to information they needed for diagnosis*
 - “Let’s go back and try ‘no’ then”



Autonomous Vehicles: 2 Strategies

- Build fully driverless Autonomous Vehicles (level 5).
 - No concern about driver distraction
 - Enables different business models and services
 - ...but many hurdles still to overcome

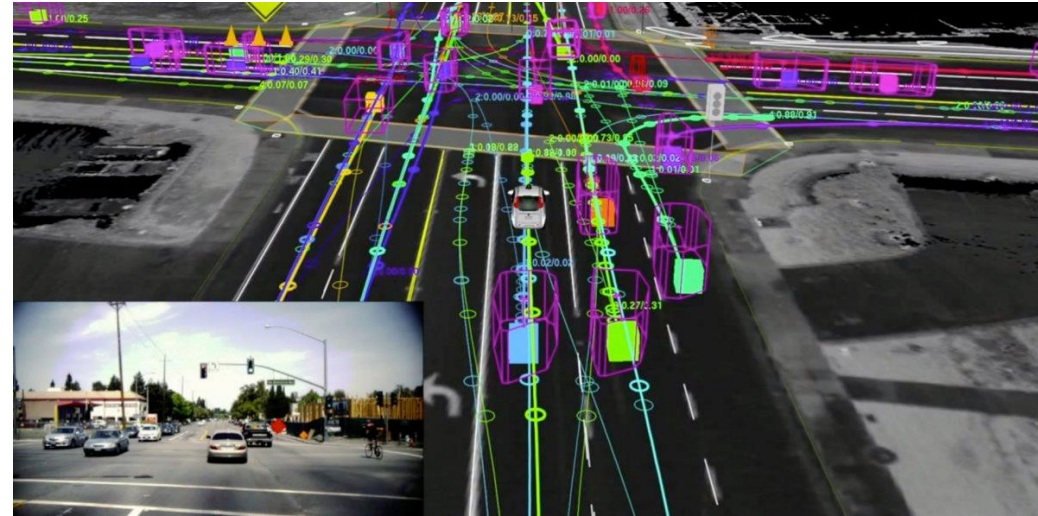


- Build ever more autonomous and safety technologies into regular vehicles (Levels 2-5)
 - May lead to increased safety on the road before full autonomy
 - Requires continued supervision by the driver
 - Can you learn to fly by jumping higher?

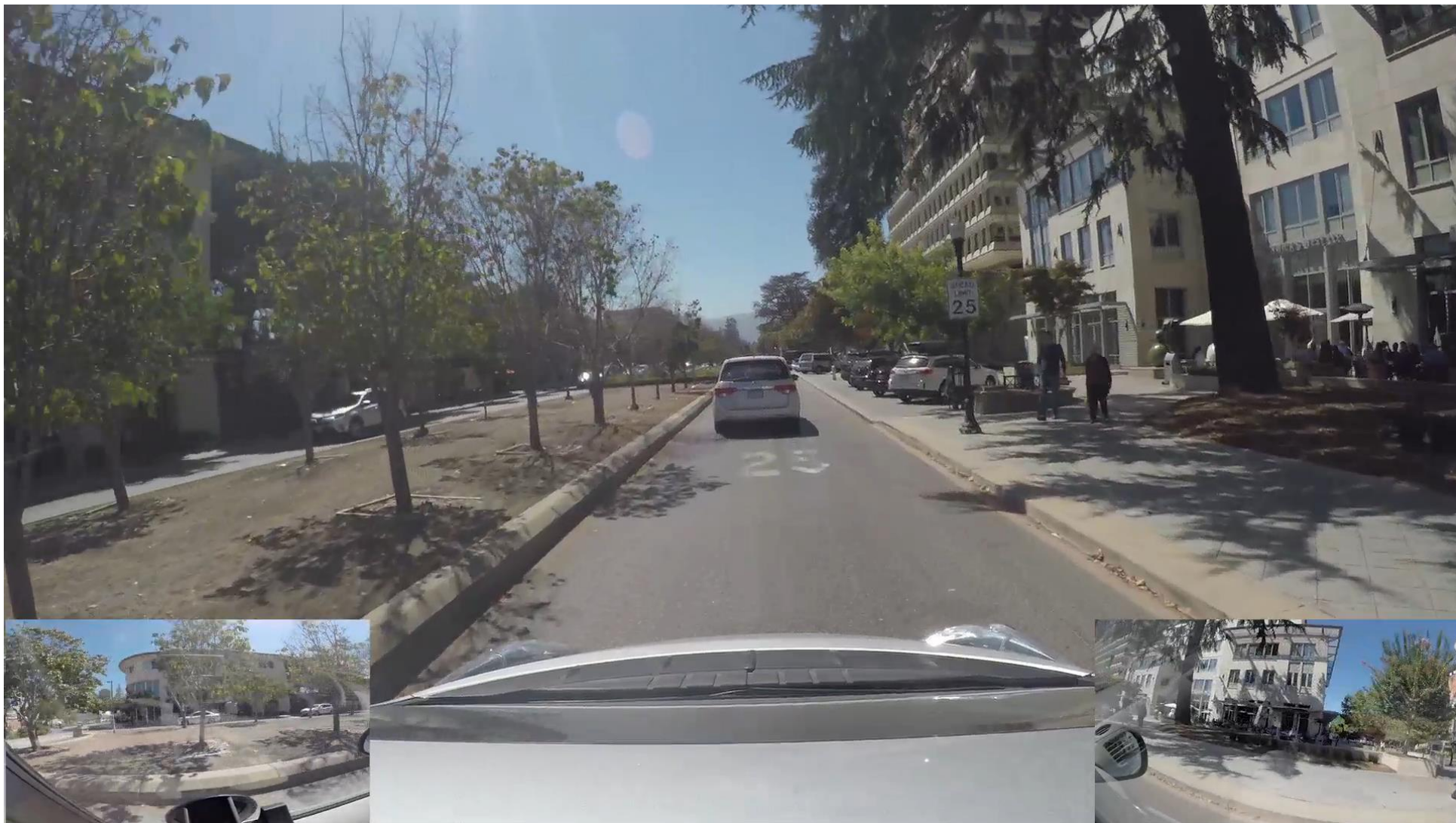


Some hurdles to full autonomy

- Perception of intentions
- Good 3D maps
- Predictions
 - Especially given the dependence on self
- System failures/Safety procedures
- **Interacting with other (human) road users**



Interactions on the road



Interpersonal trust

Pedestrian → Driver

He is in control of his vehicle
He can see that this is a road (and this is a sidewalk)
He can see that he is approaching a crosswalk
He knows that peds have the right of way
He knows that in CA cars customarily stop for pedestrians
He is not a terrorist/evil/drunk
He is paying attention

Pedestrian → Driver → Pedestrian

He can see me
He can see that I am a human being
He can see I am able bodied
He can see that I am a pedestrian
He can see I want to cross
He can see that I can see him approaching
He can see that we are in potential conflict (i.e., he and I experience space & time in essentially the same way)

He is stopping for me

Conclusion

- Self-driving cars are the most ambitious AI application yet
- Solving human-interaction remains a formidable challenge

