

Designing Autonomous Vehicles with Anthropology



Road User Interaction and Robots on the Road Logan McLaughlin M.S. Candidate Applied Anthropology



Autonomous Vehicles?

Autonomous Vehicles (AVs) are on the verge of public release. In the Fall of 2014, the ANTH 5110 Design Anthropology class began a project for Nissan Research Center Silicon Valley (NRC-SV) where we investigated the Social Life of the Car. This lead to my thesis work on road user interaction.

What We Were Looking For?

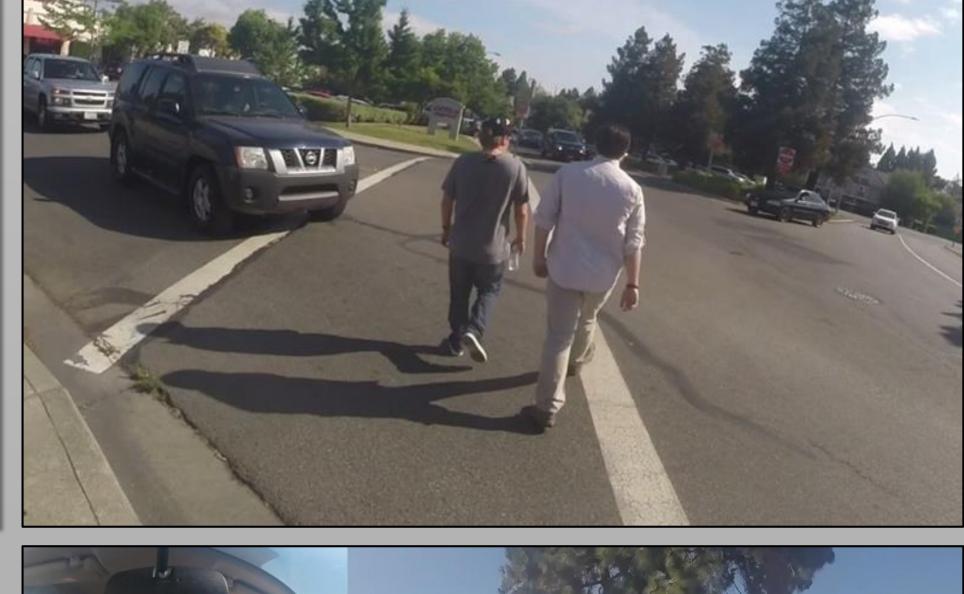
Driving is culturally nuanced and situated behavior, yet it is something we all do pretty automatically. How then do we program autonomous vehicles to interact like humans do on the road? What sorts of behaviors do we need to impart upon AVs for them to navigate human roads?

Travel Alongs

We videoed and interviewed active drivers and pedestrians on their normal routes to understand how an AV could interact in various road contexts and situations. We called our form of video ethnography "travel-alongs".



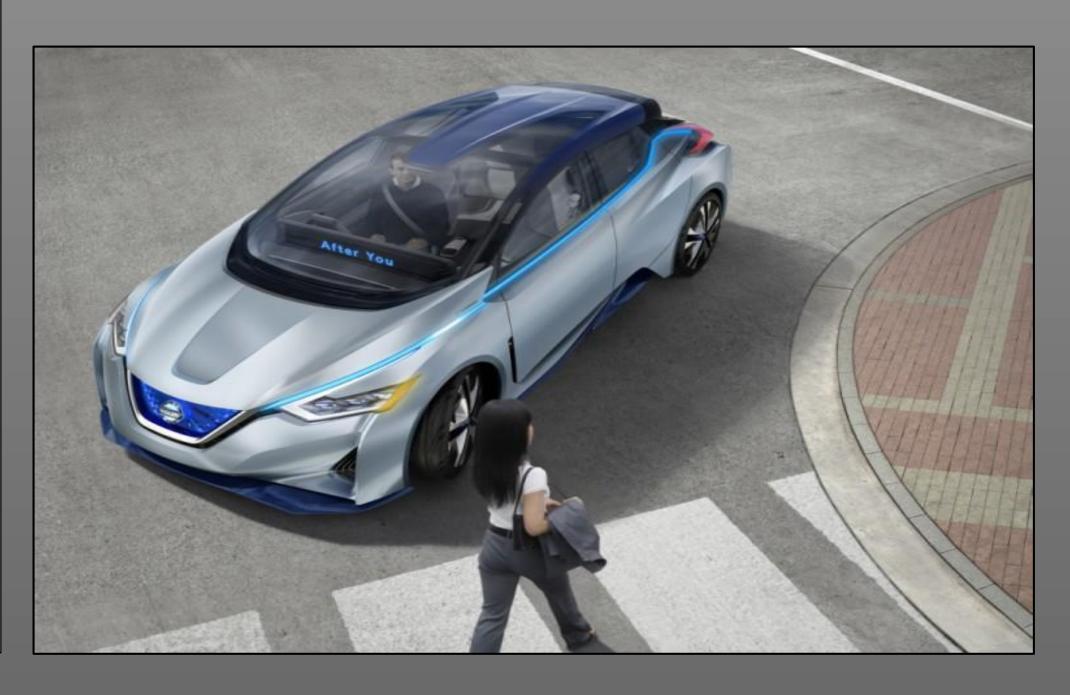


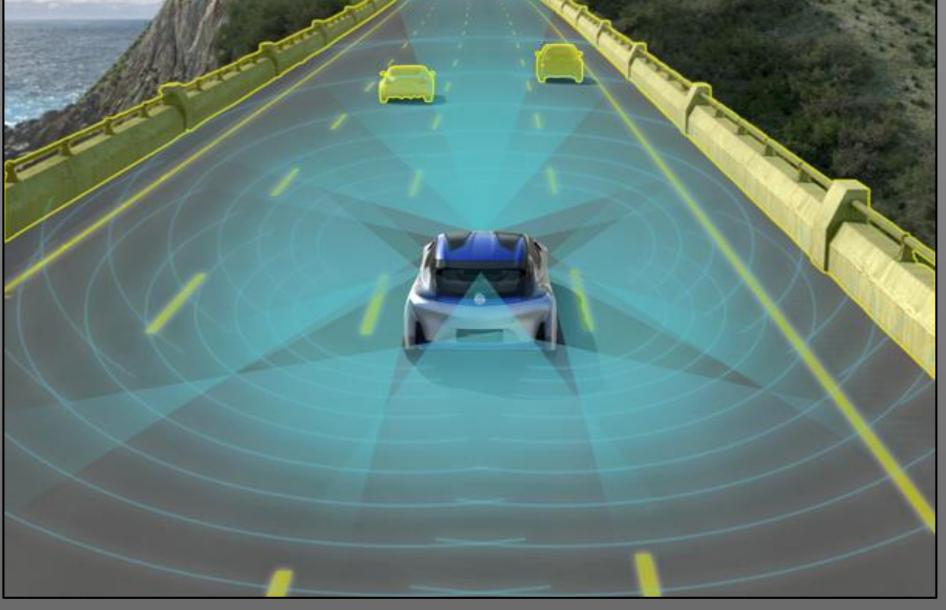




Capturing the Travel Experience

In order to capture the experience of travel from every angle, I used a portable setup of GoPros that could simultaneously capture, synchronize and analyze footage. Not only did we capture video of drivers and pedestrians, we also captured extensive video of high-traffic intersections to analyze a broader spectrum of road user behavior.





Can AVs Be Locals?

We questioned if an AV can acquire and utilize local knowledge by understanding the user's preferred routes and their methods for avoiding certain locally-situated traffic patterns. One solution we proposed was for the user to "teach" the AV how to properly drive in the given locale.

AVs Navigating a Human World

One of the chief concerns facing the AV concept is the fact that they will need to coexist with humans on the road. For this reason, human-centered design is critical to insure that AVs can work *with* humans rather than against them.

The Cutting Edge of Technology

As an anthropologist, I intend to work on the cutting edge at the intersection of humans and technology. Whether that is Autonomous Vehicles, Virtual Reality, or Digital Media wherever human beings and technology intersect I will be using ethnography to insure that users needs are met.