

# Autonomous Vehicles:

Now and the Future

By Daniel Allex



# Current State of Autonomous Vehicles

- **No company** sells fully-autonomous vehicles for consumer use
- **Waymo** is testing fully-autonomous vehicles on public roads
- **Tesla** sells partly-autonomous vehicles for consumer use



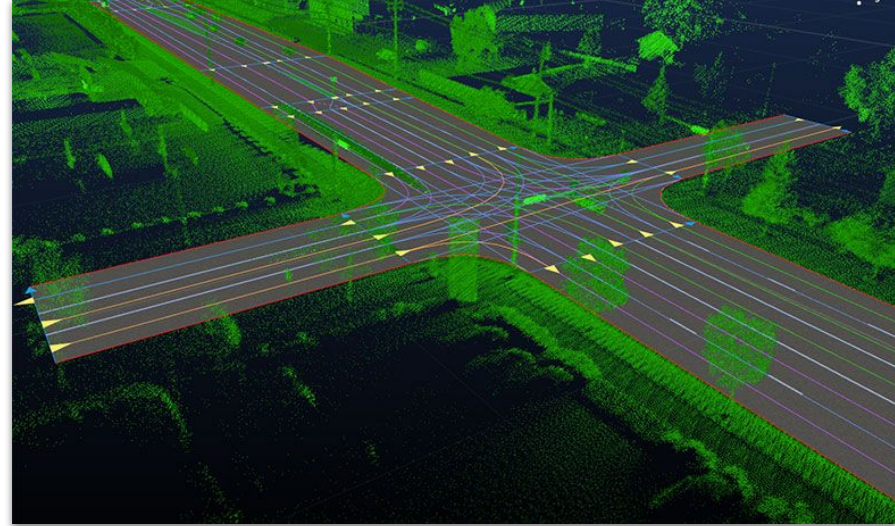
# How Autonomous Vehicles Work



- Uses precise 3D maps
- Artificial Intelligence used to make decisions
- Round shape maximizes view of sensors

# The Problem with 3D Maps

- Long time to make each map
- Must give precise locations for obstacles
- Too many roads to make maps for



# MapLite

- Framework for self-driving cars
- Does not need 3D maps
- Less accurate than most autonomous vehicles
- More practical for low traffic roads



# Increase in Safety

- Car accidents common due to human error
- Autonomous vehicles could greatly reduce accidents



# Efficiencies with Autonomous Vehicles

- Autonomous truck platooning uses less fuel
- Autonomous electric car services could lower emitted greenhouse gases





# Legal Limitations

- Some states do not allow or have strict regulations on autonomous vehicle testing
- Regulations get stricter with more disengagements





# My Stance

- More research should be done on 3D-Mapless frameworks such as MapLite
- Autonomous vehicles will improve road safety
- Government should gradually get rid of self-owned cars



# Main Topics

- Current state of autonomous vehicles
- Technology of autonomous vehicles
- Safety and efficiencies
- Legal limitations

