Self-Driving Vehicles: The Future of Transportation

Are you a movie fanatic or devoted Netflix binge watcher? Maybe you're interested in sci-fi cinema or sitcoms, or fictional pieces in general. Whatever the case, I'm sure you've seen a screenwriter's representation of the high-tech future that mankind has been waiting for – and this image almost always includes advanced, self-driving vehicles.

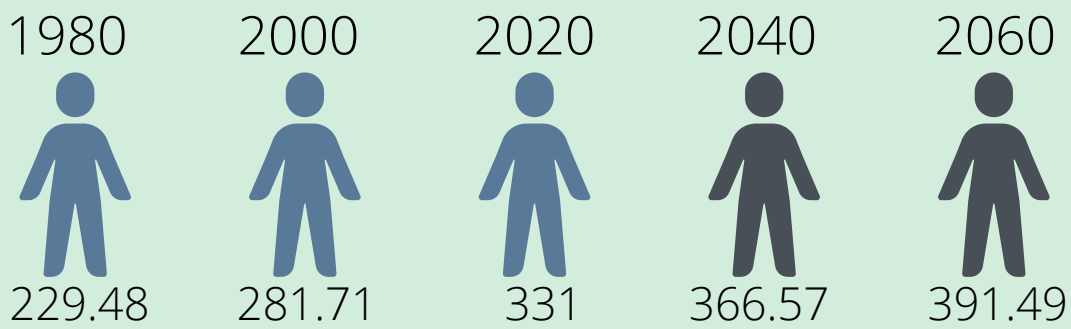My name is Erin Weinhold and I am a senior in the Psychology department at the University of Michigan. Research is an essential portion of the UofM atmosphere, and my time as a bioscience research assistant at the Transportation Research Institute provided many opportunities to assist in ground-breaking projects. The Institute conducts a variety of research on different transportation topics, ranging from motion sickness to driver/passenger safety logistics.

"The Center for Connected and Automated Transportation (CCAT) aims to advance research in the field of transportation safety, mobility, and sustainability via connected vehicles, connected infrastructure, and autonomous vehicles." [1]

As the Population Grows, Driving Gets Dangerous

United States population growth projection (in millions) [2]

1980	2000	2020	2040	2060
229.48	281.71	331	366.57	391.49

- More Americans on the roads means greater traffic congestion and thus a greater risk of traffic accidents
- Americans age 65+ and younger drivers (ages 16-24) are overrepresented in traffic fatalities
  - Safety risks associated with older and younger drivers, occupants, and pedestrians create demands for new vehicle-design strategies

Benefits of Self-Driving Cars

- Fully automated vehicles that can see more and respond faster than human drivers could greatly reduce errors, crashes, and the resulting injuries
- Economic costs of motor vehicle crashes will be substantially reduced
- Roads filled with automated vehicles could reduce traffic congestion, allowing time and money spent commuting to be put to better use

Looking Towards the Future

- For more information on the University of Michigan's contribution to the development of self-driving vehicles, check out the Transportation Research Institute website: umtri.umich.edu

1. University of Michigan Transportation Research Institute, "Projects," https://umtri.umich.edu/research/projects/
2. Max Roser, "Future Population Growth," Our World in Data, last modified November 2019, https://ourworldindata.org/future-population-growth