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What does the word autonomous mean?

Autonomous describes things that function separately or independently. ... The corresponding noun is autonomy, referring to the state of existing or functioning independently. **Autonomous** is from Greek autonomos "independent," from autos "self" plus nomos "law."

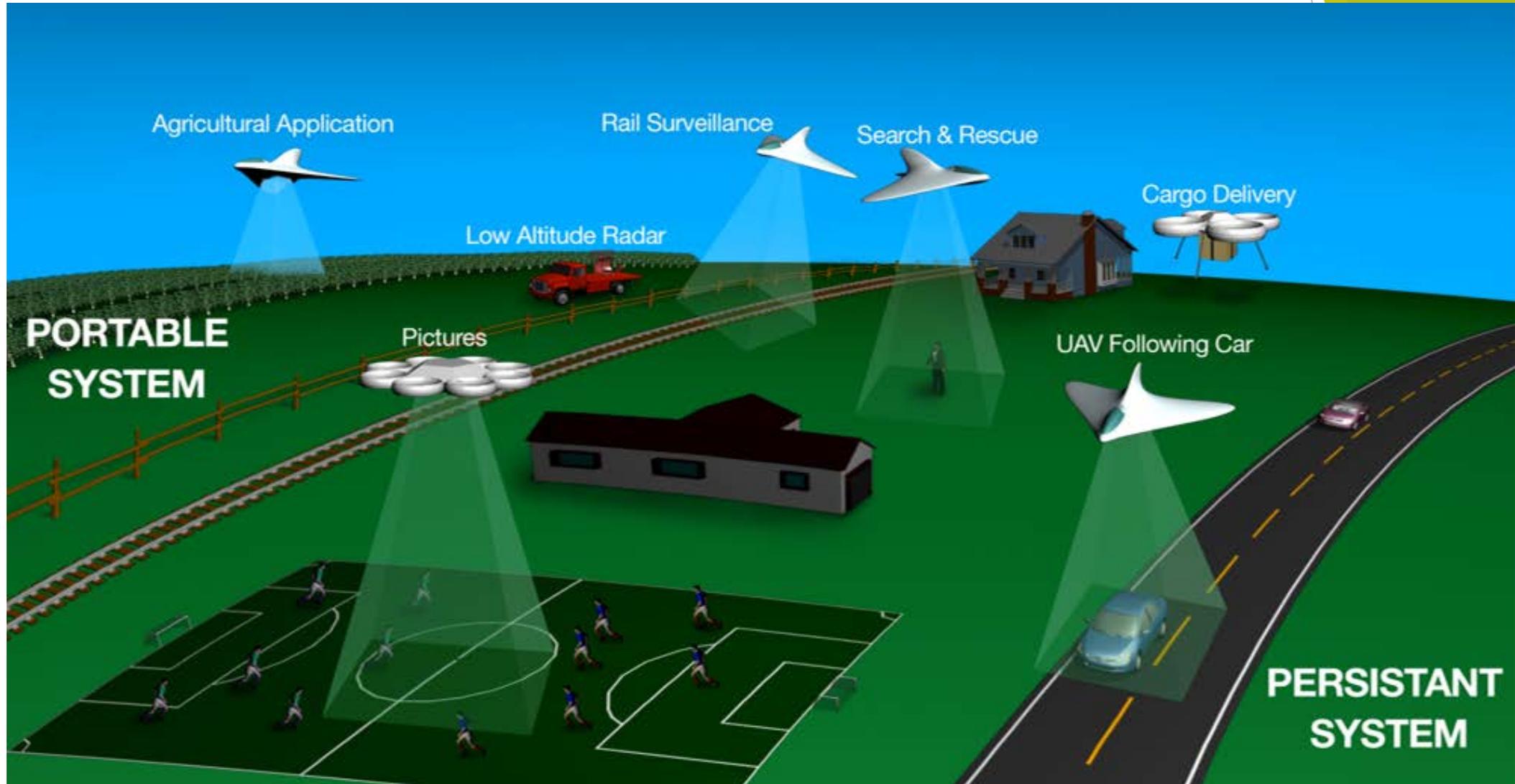
What is an autonomous vehicle?

The Nevada law defines an **autonomous** vehicle to be "a motor vehicle that uses **artificial intelligence, sensors and global positioning system** coordinates to **drive** itself without the active intervention of a human operator."

What is autonomy in technology?

Autonomy technology is any kind of **technology** that can function without being told what to do by a person on Earth. Robots in science fiction movies are a good example of **autonomy technology**.

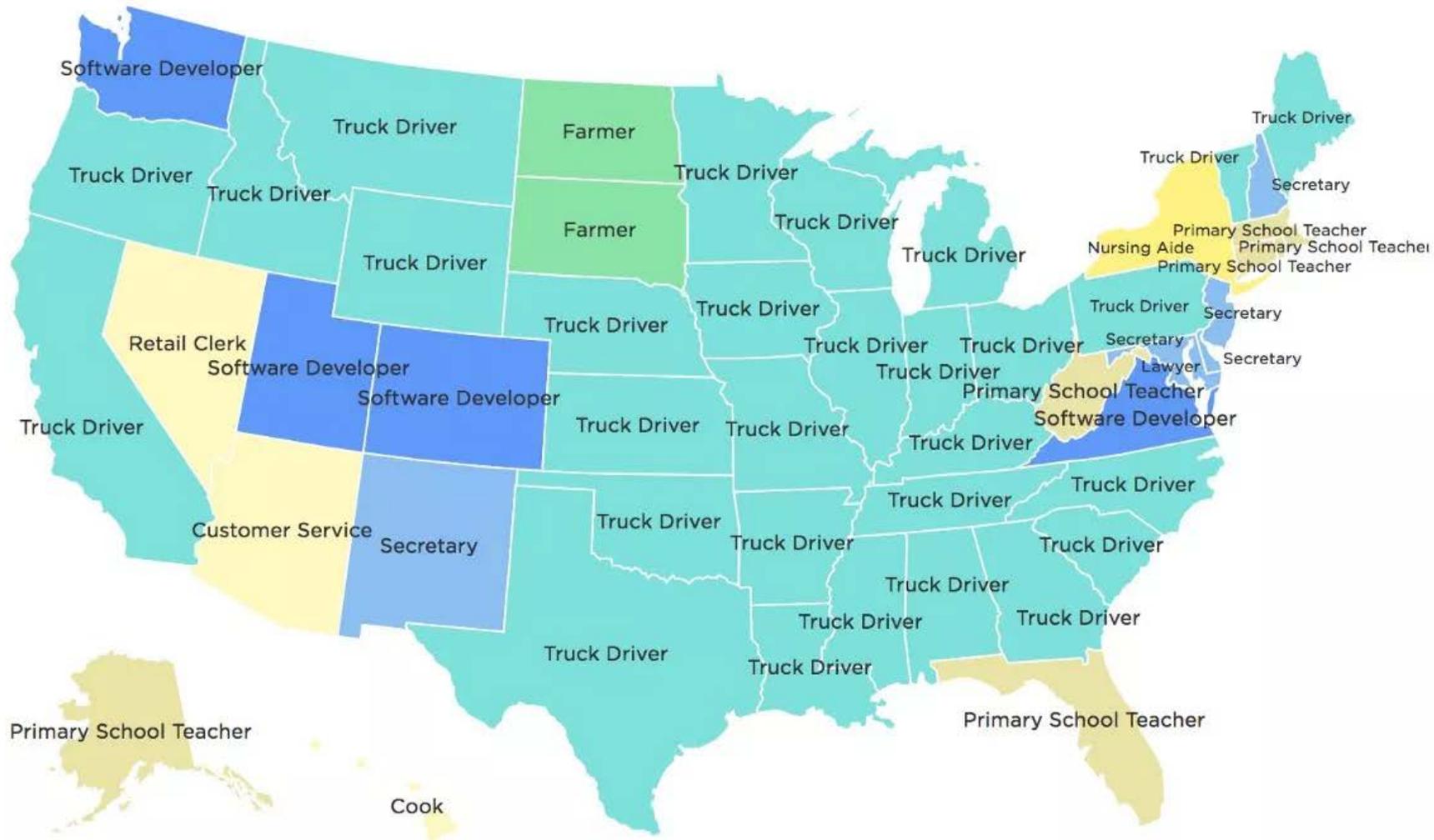
Autonomous Technology: Land & Air



ROBOCARS COULD ADD \$7 TRILLION TO THE GLOBAL ECONOMY BY 2045 (WIRED, JUNE 2017)

- ▶ Wired magazine (June, 2017) predicts \$2 TRILLION boost for US economy by 2050
- ▶ Could displace up to 4 million US transportation workers
- ▶ Expected to save 600,000 lives by 2045 globally

Industry Impact on Existing Jobs



Autonomous Jobs for the Future

- ▶ All forms of transportation: land, sea, and air will be impacted
- ▶ All things Computer Science and Information Technology
- ▶ Big data analytics, storage and cloud-services
- ▶ Computer programming
- ▶ Artificial Intelligence (AI)
- ▶ Sensors like cameras and LiDAR
- ▶ GIS, GPS, Remote Sensing
- ▶ Battery technology

Technology Programs Most Likely Impacted by Autonomous Technology

- ▶ Automotive repair (complex navigation along with all-electric cars)
- ▶ Aircraft repair (avionics especially as new sensors become required)
- ▶ Pilot training (will we even have them?)
- ▶ Computer science (are we teaching the right skills?)
- ▶ Information security (mobile computers become MUCH more critical)
- ▶ Civil engineering (embedded navigation systems on highways?)
- ▶ Diesel and gas engine technology (all electric cars replace petroleum?)
- ▶ Programs not even thought of yet

The Way Forward

- ▶ More important than ever to monitor professional organizations for industry trends
- ▶ Increased need for Industry Advisory boards, especially regional and national ones with “big picture” view
- ▶ Attendance to national conferences (AUVSI, Tesla Foundation, Society Automotive Engineers, etc.)
- ▶ Regional Developing a Curriculum workshops (DACUMs)
- ▶ National Industry and Business Leadership Team (nBILT)
- ▶ Possible National Center for Unmanned Systems

Your Turn

- ▶ Identify potential impacted programs on your own campus.
- ▶ Identify local industries/employers that will be impacted by autonomous technology.
- ▶ Will your community gain or lose jobs due to autonomous technology?
- ▶ How best to retool existing programs?
- ▶ Are you prepared to build new programs?
- ▶ Identify sources of help for your efforts?