

Autonomous Technology Thriving in Arizona

Arizona is rapidly becoming the top proving ground for autonomous technology innovation. There are a number of key factors that make Arizona a favorable market and continue drawing companies that are looking for a great ecosystem supporting the autonomous technology industry.

Business Environment

Governor Ducey's has established the [ADOT Self-Driving Vehicle Oversight Committee](#), allowing for autonomous testing on Arizona roads.

Climate

Arizona has great infrastructure and climate for testing autonomous vehicles – flat land, consistent weather, predictable driving conditions.

Workforce

As an emerging tech market, Tucson's proximity to the University and Pima Community College (PCC) uniquely positions us to prepare students and serve the workforce needs of the autonomous vehicle industry. In 2019, TuSimple and PCC announced the first [autonomous driver certification program](#).

Institute for Automated Mobility

Governor Ducey signed an executive order in 2018 creating the [Institute for Automated Mobility](#). The University of Arizona, Arizona State University, Northern Arizona University, Intel and other public/private organizations are collaborating on state-of-the-art autonomous research in Arizona. The goal is to advance all aspects of autonomous vehicles, including science, safety, and policy.

Companies Shaping Autonomous Technology in Tucson

Tucson and Arizona provide an ecosystem of state, local and educational institutions that support autonomous technology innovation. With a strong foundation for innovation, it's easy to see why [TuSimple chose to establish and expand its Research & Development headquarters](#) in Tucson. Robert Brown, Head of Government & Public Affairs at TuSimple, highlights that Tucson's "access to universities, a great workforce and close proximity to a city center provides a great opportunity to test and develop the technology." TuSimple's operations in Tucson continues drawing national attention (e.g., [YouTube Originals series – The Age of A.I.](#)) with its cutting-edge technology — working to improve efficiency and safety for long-haul trucking through the world's first and only autonomous network. Learn more at [TuSimple.com](#).

Southern Arizona is an established hub for mining and continues to build its assets with autonomous technology with companies like Modular Mining, a Komatsu Company. Established in Tucson in 1979, Modular Mining revolutionized the mining industry with the development of the DISPATCH® Fleet Management System. This technology was the first of its kind in the industry and continues to help improve productivity and efficiency for open pit mines. The

DISPATCH system's global success served as the springboard for further innovation, including the ProVision® High-Precision Machine Guidance system, the MineCare® Maintenance Management system, and others. Recently, Modular Mining unveiled its new [Customer Experience Center \(CEC\)](#). At the CEC, clients can see and experience how different systems, including autonomous, help to improve safety in mining operations while improving efficiencies and cost savings. Learn more at [ModularMining.com](#).

Community Assets Driving Autonomous Technology

Pima Community College (PCC) is a valued community asset that continues to deliver a skilled and qualified workforce of the future. To stay ahead of the curve and anticipate industry needs, PCC partners with local companies to focus on ensuring their students are developing the skill sets that industry-leading companies are looking to acquire. In 2019, TuSimple and PCC announced [PCC's Autonomous Driver Program](#). This first-of-its-kind program is shaping a workforce to be ready for the industry's innovative technology as it is being developed. This program also plays an important role in providing talent and access to job opportunities in the transportation industry, drawing young people into the profession as the trucking industry is currently facing a significant driver shortage ([American Trucking Association, 2019](#)).

The University of Arizona is another strong asset to Tucson's technology innovation market. Through the National Science Foundation Research Experience for Undergraduates (NSF REU) students every summer work to improve autonomous technology and test its real-world application in the [CAT \(Cognitive and Autonomous Test\) Vehicle Challenge](#). This challenges students to test their research outside of a simulation using a real vehicle. This knowledge pool is beneficial to Tucson and Southern Arizona with companies able to reach the bright minds researching and testing on a variety of projects from "Hyperparameter Optimization using Grid Search for use in Monocular Depth Estimation" to "Real-Time Traffic Light Identification using YOLOv3 Algorithm for Autonomous Vehicles". Assets like this in the community enable companies to witness firsthand research in the field of autonomous technology.

Quick Facts

- Arizona is first in the nation to enact an executive order supporting the testing and operation of self-driving vehicles.
- There are more than 600 automated test vehicles on Arizona roads.
- More than a dozen companies are testing autonomous vehicles and related technology in Arizona.
- Tucson's TuSimple recently launched the world's first autonomous freight network.
- Tucson is home to the first Autonomous Driver Certification Program.
- The passenger economy is estimated to be a 7 trillion-dollar global opportunity by 2050.
- Estimated 76M autonomous vehicles to be sold by 2035
- 585,000 lives predicted to be saved from autonomous vehicles between 2035-2045.