



## Research Objective

Design and build an autonomous ground robot that can provide tours of the CSUN campus with NASA JPL NeBula compatible software framework, showcasing STEM technology to the campus and surrounding community.

## Research Approach

- Develop software infrastructure that can communicate with autonomy framework developed by team CoSTAR for the DARPA Subterranean (SubT) Challenge.
- Mechatronic design of sensing and wireless communication system payload onboard unmanned ground vehicle.
- Build software model of CSUN campus to test robot navigation and autonomy in simulated urban environments.
- Integrate robot perception sensor data into base station and user interface for remote operation at ARCS gallery space to enhance visitor interaction during virtual campus tours.
- Explore the interaction of GPS waypoint navigation with autonomous path planning and obstacle avoidance behavior to achieve safe operation during campus tour scenarios.

## Research Team

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