Voyage Develops Longitudinal Controls for Self-Driving Taxis

Challenge

Develop a controller that enables a self-driving car to maintain a target velocity and keep a safe distance from obstacles.

Solution

Use Simulink® to design a longitudinal model predictive controller. Tune parameters based on experimental data imported into MATLAB®. Deploy the controller as an ROS node using Robotics System Toolbox™. Generate source code with Simulink Coder™, and package it as a Docker container.

Results

- Development speed tripled
- Easy integration with open-source software
- Simulink algorithms delivered as production software
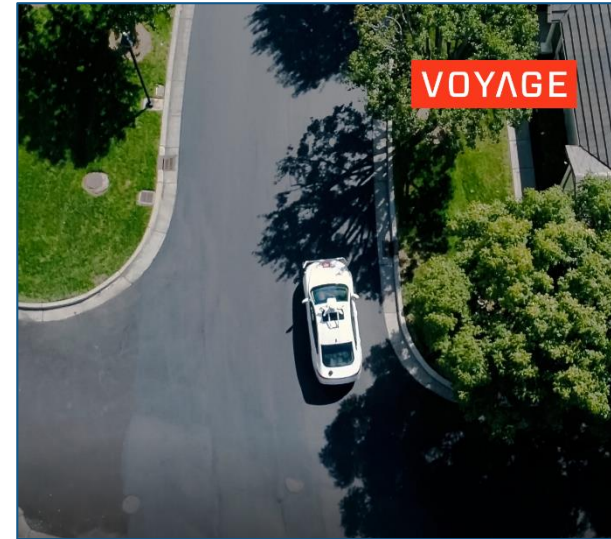
Voyage's self-driving car in San Jose, California.

"We were searching for a prototyping solution that was fast for development and robust for production. We decided to go with Simulink for controller development and code generation, while using MATLAB to automate development tasks."

- Alan Mond, Voyage