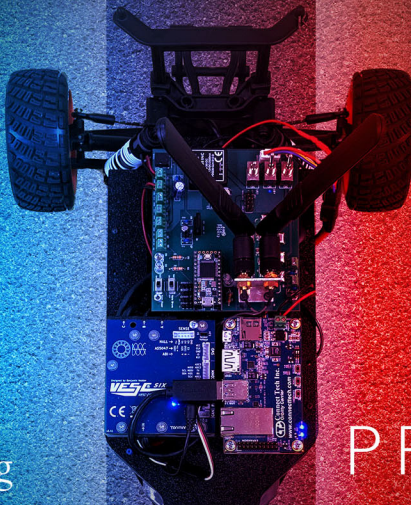


F1/10

1/10th the scale. 10 times the fun!



Penn
Engineering

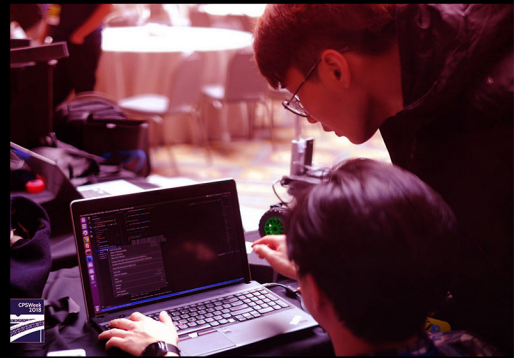
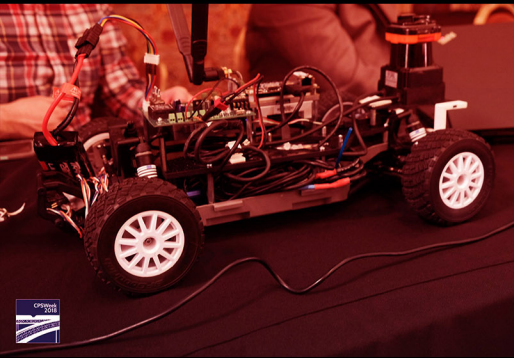
PRECISE



The F1/10 Platform

The F1/10 Platform consists of:

- All the hardware needed to build an F1/10 car from scratch.
- All the software needed to have F1/10 drive autonomously.
- A simulator to test perception and navigation algorithms.
- Exhaustive documentation available online.



The F1/10 Kit

By joining the F1/10 effort as a Team Director, your research group and institution will have access to the F1/10 Kit, consisting of:

- The F1/10 Platform (hardware, software and documentation)
- Material for a semester-long class on autonomous driving:
 - Lecture slides and videos
 - Code for weekly labs
 - Ideas and material for month-long projects in Machine Learning, Computer Vision, IoT, and more.



The F1/10 Community

The F1/10 community includes over 60 institutions from academia and industry and individuals, who have used the resources on f1tenth.org to build their own cars. It also includes high school teams.





Research Supported by F1/10

Perception	Planning	Control
Computer Vision	Sampling-based Planning	Trajectory Trackers
Image Processing	Multi-agent Systems	Distributed Control
Sensor Fusion	Scenario Generation	Learning and Control
Anytime Perception		Event-triggered Control



Cross-cutting Research Topics

- Formal verification and testing of autonomous systems
- Security of connected Autonomous Vehicles
- Learning for planning and control
- Runtime verification and online monitoring
- Real-Time robotic systems
- Energy-efficient hardware for perception workloads



F1/10 Roles

- **Research Advisor:**
Conduct research using the F1/10 platform.
- **Team Director:**
Send a team to an F1/10 racing competition.
- **Course Instructor:**
Offer a quarter-long or semester-long class based on the F1/10 material. Contribute innovative student solutions back to the F1/10 code base and Reference Manual.
- **Community Builder:**
Organize outreach and demonstrations to local community colleges, teaching-focused institutions, and high schools.

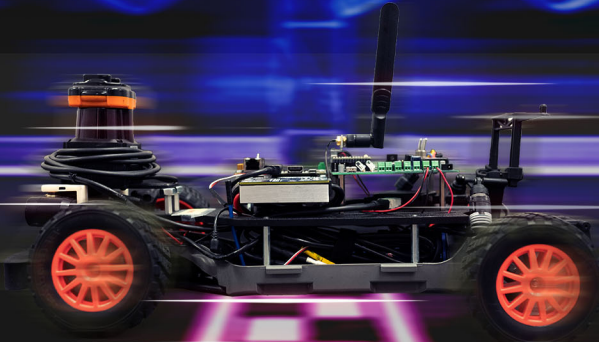




AUTONOMOUS RACING

F1/10 is an autonomous car.
It is a complete, ready-to-run platform
for research, education and outreach
to STEM communities and beyond.

f1tenth.org



PRECISE

PENN RESEARCH IN EMBEDDED COMPUTING AND INTEGRATED SYSTEMS ENGINEERING