DALLARA-BUILT

AV-21

INDY AUTONOMOUS CHALLENGE

Official racecar of the Indy Autonomous Challenge (IAC)

The IAC is a collaborative effort that brings together public, private, and academic institutions to challenge university students around the world to imagine, invent, and prove a new generation of AV software and inspire the next generation of STEM talent.

Purdue AI Racing Initiative

- Started as "Black and Gold" Autonomous Racing team in 2020
- Formerly in partnership with West Point Military Academy
- 1 of 9 active IAC teams using the Dallara AV-21 chassis
- Last event with Purdue participation: Autonomous Challenge (CES 2023), Las Vegas

Why is future AI-based autonomy important?

- Enhancing passenger & freight transport: safer, faster, economical
- Higher economic productivity and development
- Truck driver training for high-speed operations in future era of truck automation
- Enhancing robustness, fault detection, & forensics for high-speed autonomous systems
- Highly efficient military weapon systems

DESIGN

Car design is a collaboration between Dallara's Italian headquarters in Varano Melegari, Parma, and Dallara USA.

AUTONOMOUS

Retrofitted with hardware and controls to enable automation

SPEED

Land speed record: **192 MPH**

TECH

- Uses state-of-the-art algorithms to tackle engineering challenges such as:
- Sensor fusion with GPS/LiDAR/inertial navigation sensors
- Machine learning, AI algorithms
- High-speed collision avoidance, curve negotiation, adversarial overtaking
- Path planning
- Vehicle system dynamics and controls

SPONSORSHIP OPPORTUNITIES

Purdue AI Racing Initiative is always looking for industry partners and private donors to support the team, and ultimately, to further advance Purdue's national leadership in AI and systems automation. For details, please contact Dean Arvind Raman.

Purdue AI Racing Initiative is proudly sponsored by:

PURDUE FOR LIFE FOUNDATION