Sponsor Handbook

Season 2019/2020

Our Mission

" *The mission of MIT Driverless is to develop a racing platform at the forefront of autonomous technology while providing a unique hands-on experience to our team members*

Luke Kulik
Co-Founder
Delft BS '16, MIT SM '19

Skanda Koppula
Co-Founder
MIT BS '16, MEng '18

Kevin Chan
Co-Founder
MIT BS '16, MEng '18

Our team is developing a full stack autonomous system to incorporate to TU Delft's top electric vehicle

Sense & Actuator Integration
- Brake Actuation
- Steering Column Actuation
- Sensor Placement and Packaging
- Embedded Electronics Packaging
- Harnessing

Motion Planning and Controls
- Model Predictive Control
- Sampling Based Path Planning
- Parametric Simulation Testing
- Non-linear Control with Sums of Squares Programming

Perception & Landmark Extraction
- Computer Vision/Camera Integration
- LiDAR Integration/Processing/Filtering
- Embedded Implementation and Profiling
- Vehicle State Estimation/SLAM

Electronics & Computation
- Power distribution (HV and LV)
- Embedded Electronics Integration, Logging

TUDelft   MIT DRIVERLESS

Last Year – Make it Work
# This Year - Go for 1st!

In our **very first season** on the Formula Student Driverless circuit, we won **2nd place at Italy** and **3rd place at the prestigious Germany competition** (the world's largest engineering student competition). We plan to continue this momentum into our second season as we **go for 1st place**!

MIT DRIVERLESS

There are four distinctive features that set up our team for success

Technology

People

Delft Partnership

MIT Ecosystem
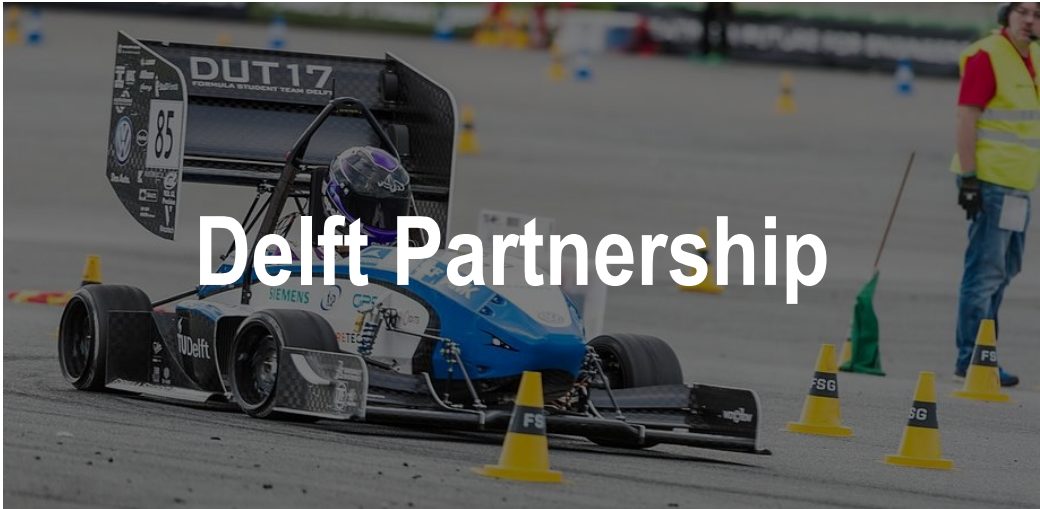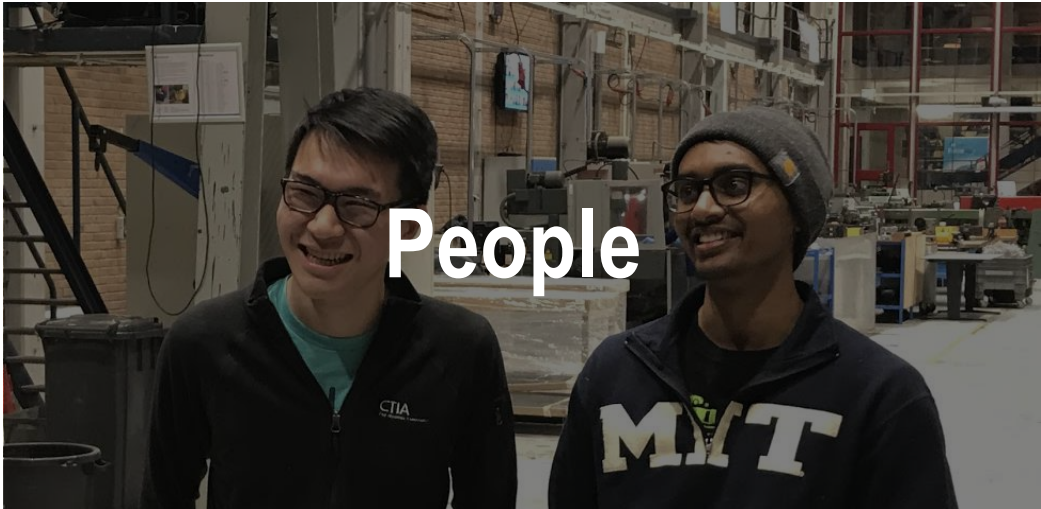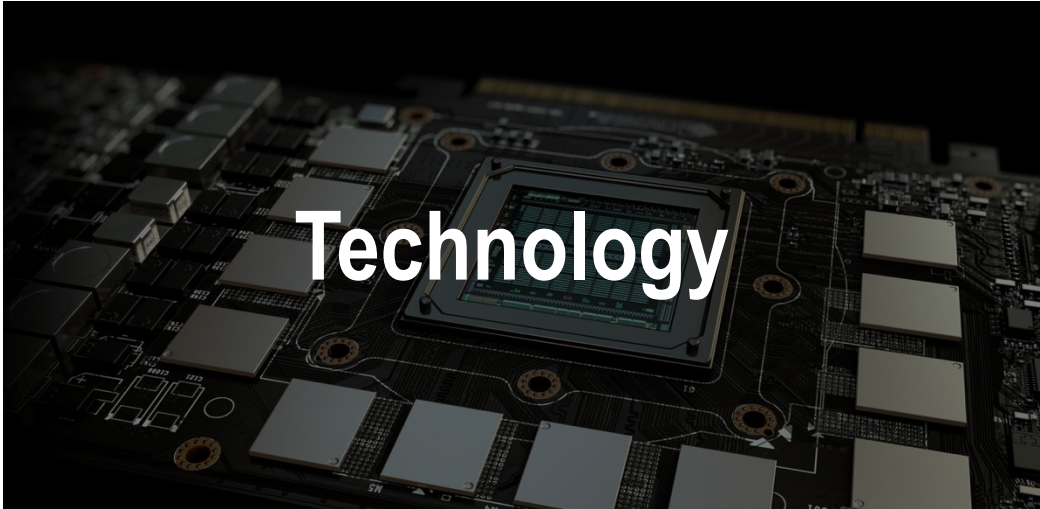
Technology: Implementing cutting edge research for maximum hardware and software performance
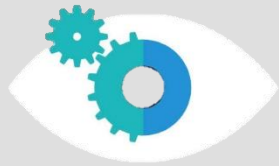
- **High-throughput, low-latency** computer vision pipeline

- **Vision processing using convolutional neural networks** and traditional graphics techniques for redundancy and safety checks
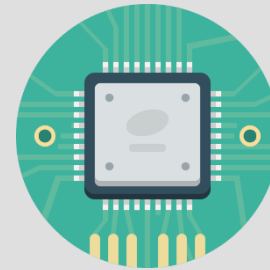
- **GPU-first, high-bandwidth compute and data infrastructure** using embedded GPUs. Ethernet, serial, and CAN to be leveraged for data collection and real-time inference.

- **Industry partnerships** with **leading compute providers**

- **Multi-modal sensor arrangement:** an array of vision, radar, and LiDAR sensors with parallel landmark extraction pipelines

- **Safety-first model mixing** in case of multiple sensor failure

- **Customized hardware designed by Delft** offering benefits of tuned 4WD, carbon fiber monocoque, custom tire compound, and 2x higher nominal battery voltage compared to American FSAE racecars
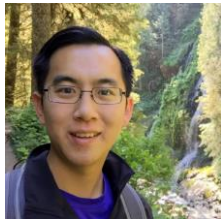
MIT
DRIVERLESS

People: Top-notch MIT students

Experienced Leadership

Kieran Strobel | Chief Engineer
- MS candidate in Aerospace Engineering, MIT
- 3 years of experience at Tesla and Apple
- Research featured in Nature magazine

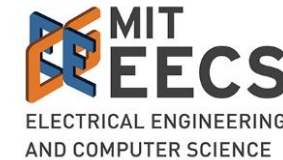**Kevin Cheung | Chief Financial Officer**
- MBA candidate at MIT
- 5 years of program management experience at Boeing
- Product Manager Intern at Aptiv

Mihir Trivedi | Project Manager
- BS candidate in Electrical Engineering and Computer Science
- Software Engineering internship experience at Mercedes-Benz R&D, Shipt

+ 30 top MIT students from across campus selected from over 150 applications

MITMECHE

MIT EECS
ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

MIT MANAGEMENT
SLOAN SCHOOL

AEROASTRO
MIT

MIT MATHEMATICS

DMSE
DEPARTMENT OF MATERIALS SCIENCE & ENGINEERING

MIT DRIVERLESS

MIT Ecosystem: faculty advisors and graduate coaches provide valuable insight and experience

Faculty Advisors
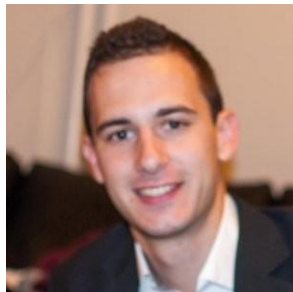

Prof. Luca Carlone
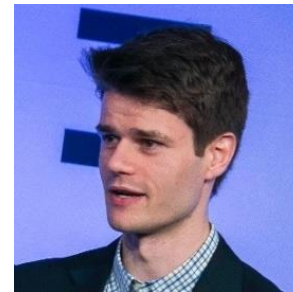
Dr. Robert Shin

Prof. Sertac Karman

Several of our advisors work with the Toyota Research Institute through Toyota's partnership with MIT's Computer Science and Artificial Intelligence Lab (CSAIL). This partnership was formed in 2015 with the goal of furthering the development of autonomous vehicle technologies.

Graduate Coaches

Ezra Tal

Dr. Max Opgenoord

Igor Giltschenski

Alex Amini

Wilco Schwarting

Delft Partnership: Two top technology universities on two sides of the Atlantic

- **MIT Driverless** is collaborating with **Formula Student Delft** from the Netherlands. This partnership will **allow both sides to push their technology forward** with **minimum risk**

- Delft is able to offer us best-in-class hardware platform capable of **3.5g turns** and **0-60 mph acceleration in 2.2s**

- MIT Driverless provides **software talent** and access to **leading-edge academic research**

MIT DRIVERLESS
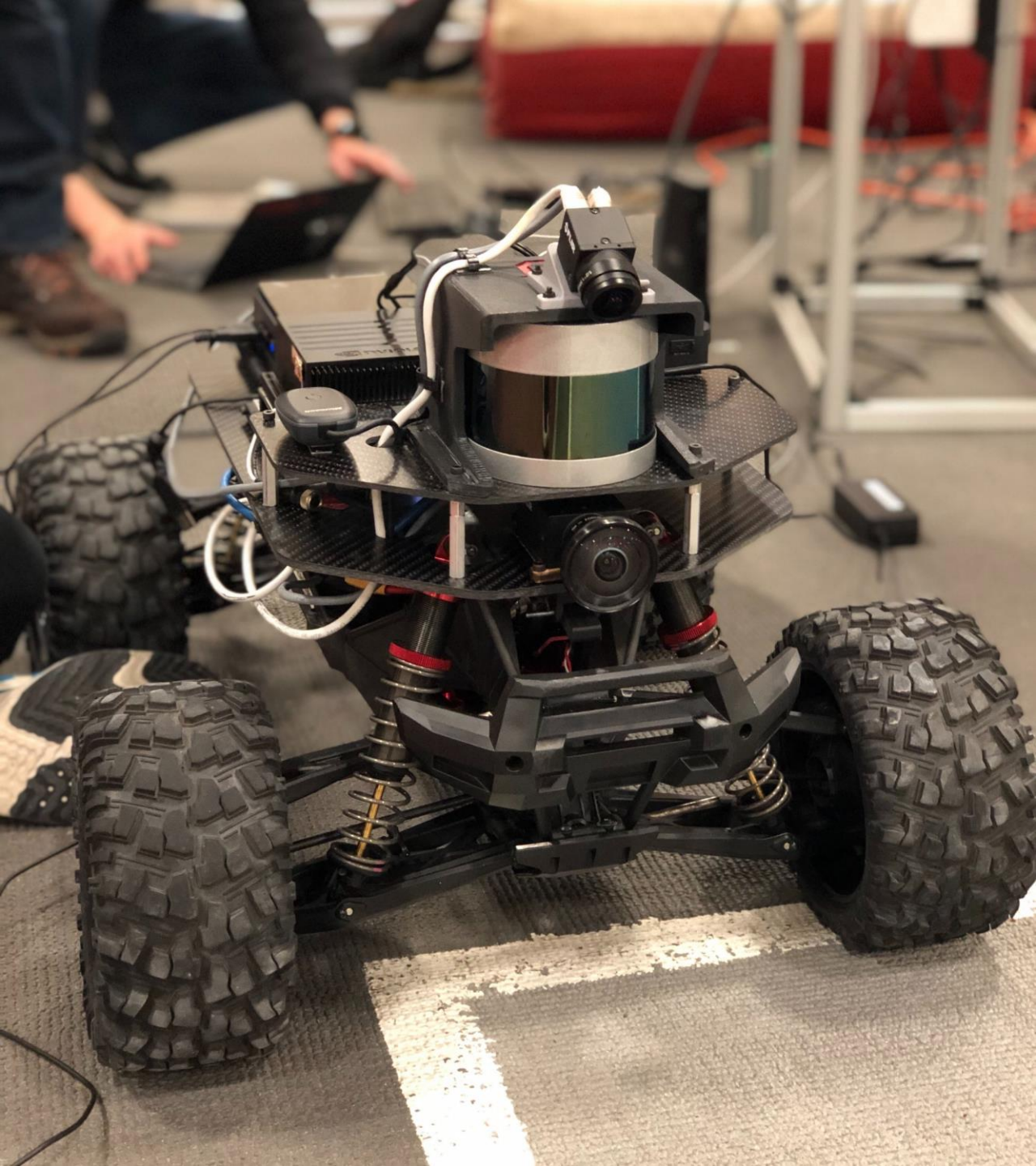
Our **testbed vehicle** at MIT allows us to **quickly iterate** with new equipment and software before integrating it onto the full-size vehicle in Delft.

MIT DRIVERLESS

Connect your company with the brightest, most ambitious student engineers - become an MIT Driverless sponsor

There are several levels of sponsorship and associated packages offered to help complement your specific objectives, enabling you to:

Collaborate with the team and **boost talent acquisition**
- Team Visit to your Office for private networking
- Jointly hosted Hackathon
- Private Info Session with Team
- Campus-wide Info Session Support
- Professional Team Resume Book

Build awareness of your brand, product, and values
- Media Coverage (Social Media and Press Releases)
- Logo Promotion (Car, Test Car, Website, Banners, Apparel, Workshop)

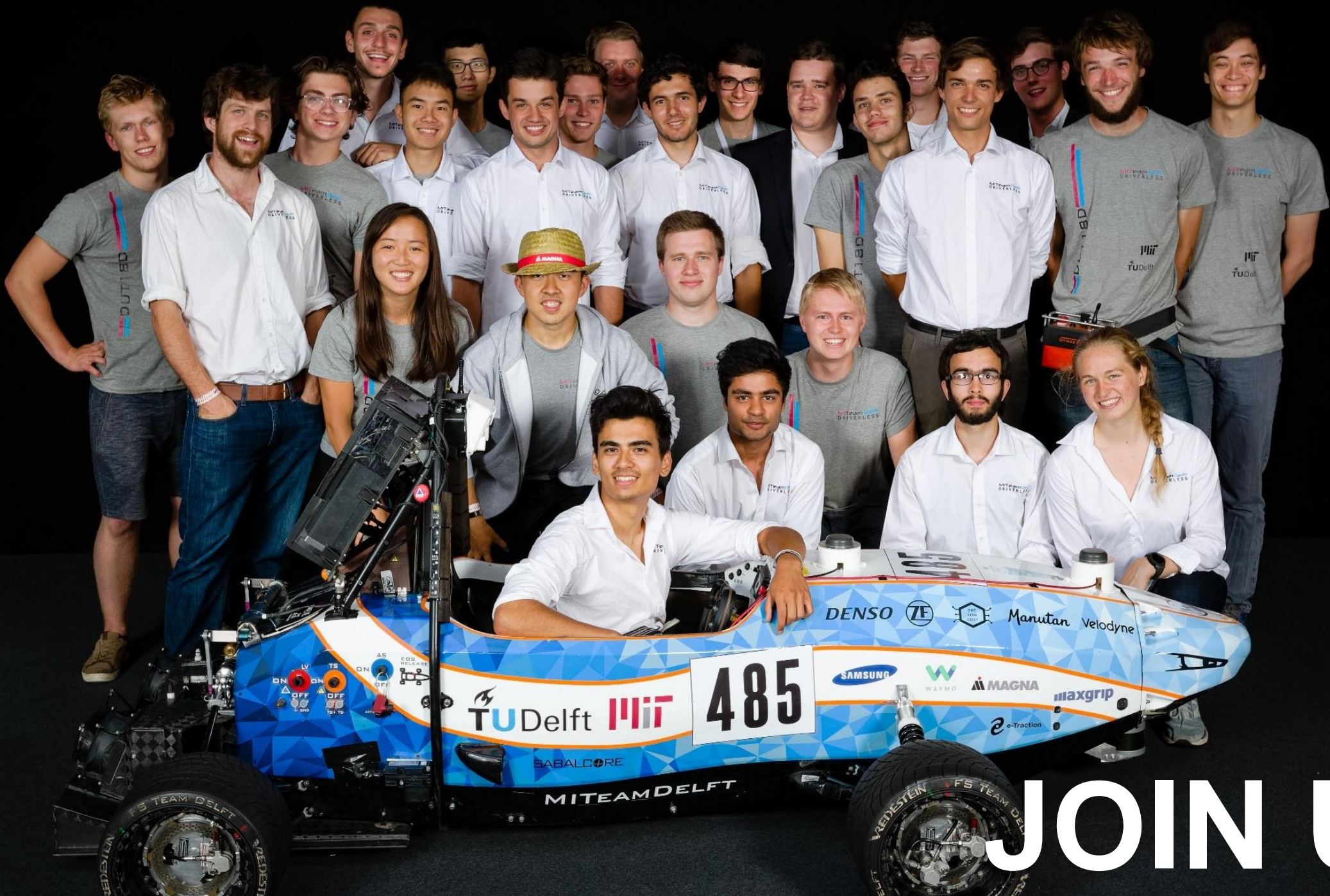**To discuss becoming a sponsor, please contact:**

Kevin Cheung
MIT Driverless CFO
+1 (516) 782-7364 | cheungk@mit.edu

Official Formula Student Germany Partners

JOIN US