2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
October 25-29, 2020, Las Vegas, NV, USA (Virtual)

F1/10 Autonomous Racing

Research and Education

Madhur Behl

Computer Science | Engineering Systems and Environment | UVA Link Lab

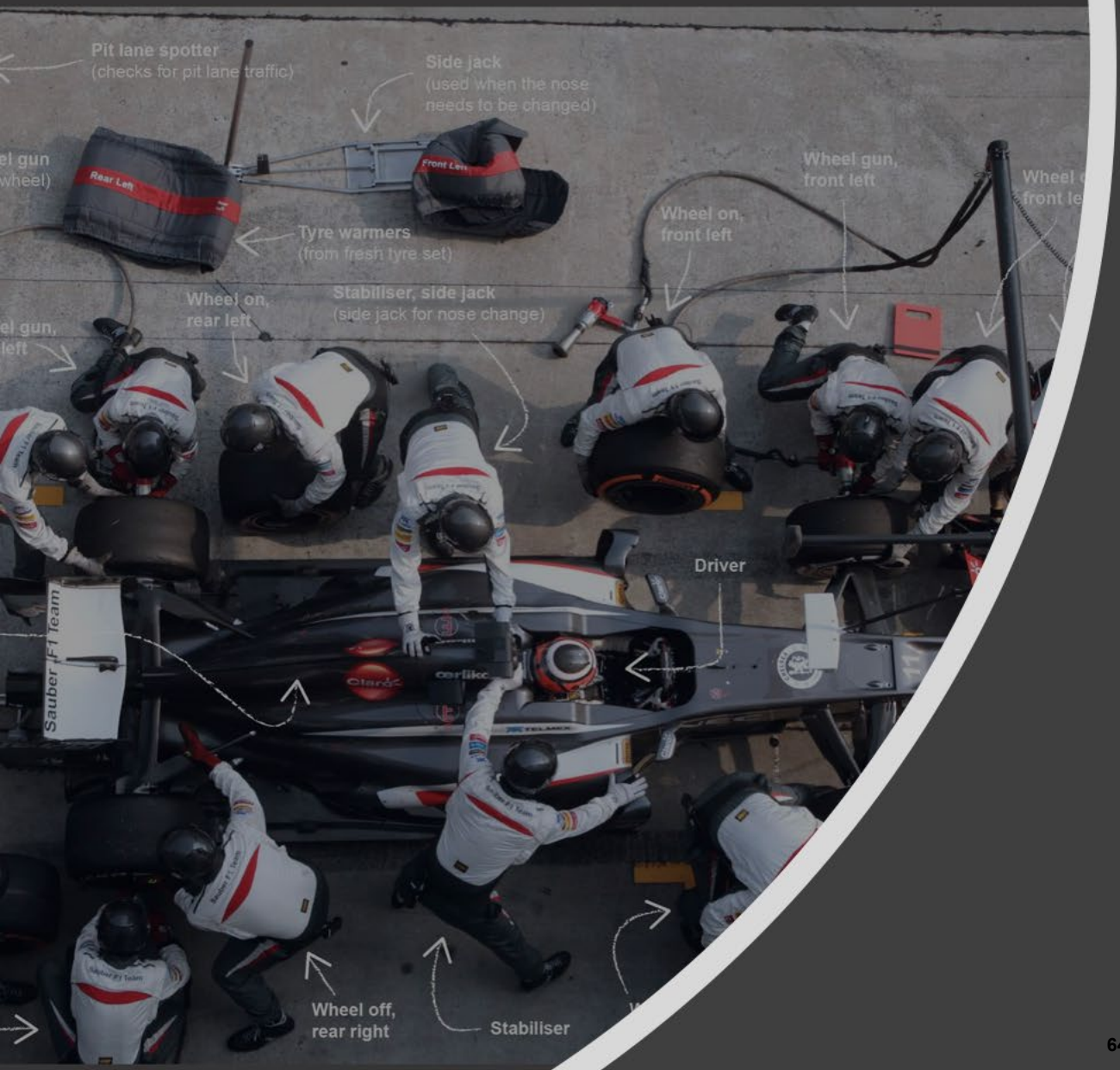
madhur.behl@virginia.edu

F1 TENTH

University of Virginia

UVA LINK LAB

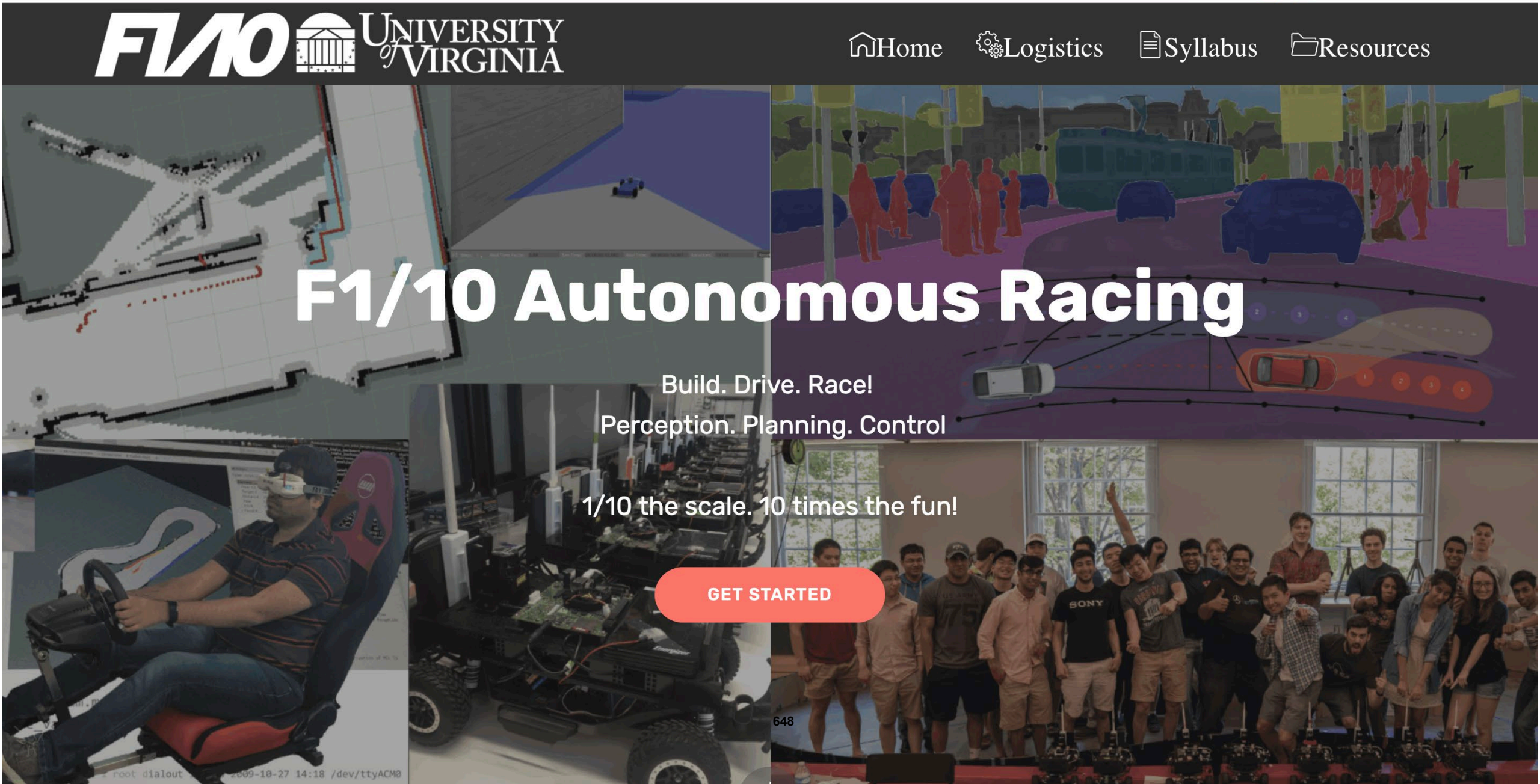
978-1-7281-6211-9/20/$31.00 ©2020 IEEE



Educating Autonomous Systems Engineers

NEC œrlikon

https://linklab-uva.github.io/autonomousracing/



Cavalier

Autonomous Racing

CAVALIER AUTONOMOUS RACING

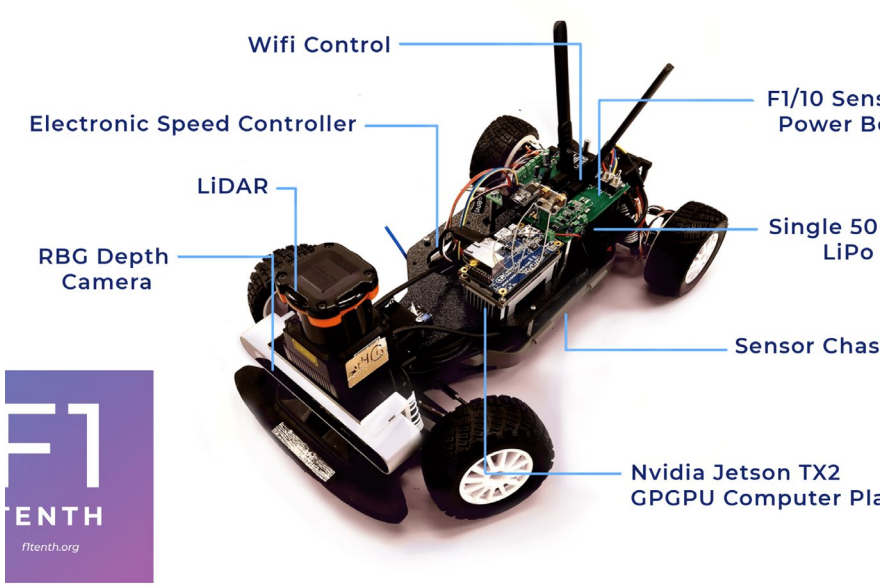
CAVALIER RACING

University of Virginia's
Autonomous Racing
Team

AUTONOMOUS

Home About Research News Team Contact

autonomousracing.dev



Competitive Autonomous Racing at every scale

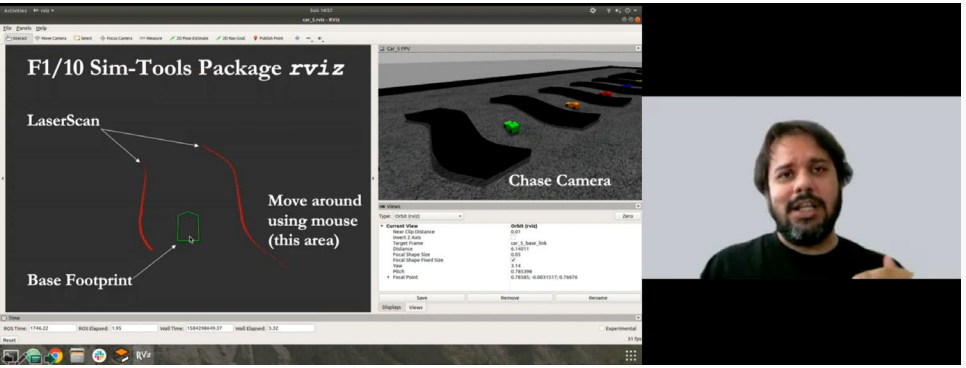
INDY AUTONOMOUS CHALLENGE

OCT. 23, 2021

INDIANAPOLIS MOTOR SPEEDWAY

ESN ENERGY SYSTEMS NETWORK

Ansys



F1/10 Lectures UVA

11 videos • 1,031 views • Last updated on Apr 28, 2020

Public

Video lectures from the Spring 2020 undergraduate F1/10 Autonomous Racing course taught at the University of Virginia.

Instructor: Prof. Madhur Behl

Slides, Code, and Lab Assignments on Course Website: https://linklab-uva.github.io/autonomousracing/

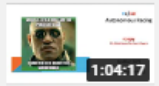
TAs: Varundev Sureshbabu, Sandesh Banskota, Mert Karakas

Madhur Behl

SORT

[F1/10 Lectures] Introduction to Robot Operating System (ROS)
Madhur Behl
1:09:21

[F1/10 Lectures] ROS Filesystem and Catkin Make
Madhur Behl
1:03:15


[F1/10 Lectures] ROS Publishing and Subscribing
Madhur Behl
1:04:17

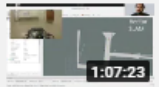
[F1/10 Lectures] - Lab Session: Beginner tutorials
Madhur Behl
57:58

[F1/10 Lectures] ROS Services, Launch and Bags
Madhur Behl
1:08:15

[F1/10 Lectures] ROS Transformations and Coordinate Frames
Madhur Behl
1:22:42

[F1/10 Lectures] Online ROS F1/10 Simulator
Madhur Behl
42:51

[F1/10 Lectures] Wall Following Assignment
Madhur Behl
41:00


[F1/10 Lectures] Simultaneous Localization and Mapping - SLAM
Madhur Behl
1:07:23

[F1/10 Lectures] Localization Using Particle Filters
Madhur Behl
43:23

[F1/10 Lectures] Follow-the-gap

madhur.behl@virginia.edu