SPECIAL TOPICS SELF-DRIVING CARS: PERCEPTION & CONTROL

LECTURERS

Matthew Johnson-Roberson, NAME
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PREREQUISITIES

Programming skills in Python & MATLAB, Some C++
All students are recommended, not required, to have a background in linear algebra & differential equations or will need to do some independent study w/*Givental, Alexander. Linear algebra and differential equations. American Mathematical Soc., 2001.*

DESCRIPTION

This course will teach the theoretical underpinnings of self-driving car algorithms and the practical application of the material in hands-on labs. Highlights will include field trips to M-City a 32-acre autonomous vehicle site on the U's North Campus, demos and rides in full size autonomous vehicles, and small group work with a competition where students test their own self-driving car algorithms. Topics will include deep learning, computer vision, sensor fusion, localization, trajectory optimization, obstacle avoidance, and vehicle dynamics.

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