Program Syllabus

TE THIS PROGRAM

CORE CURRICULUM | EXTRACURRICULAR

Core Curriculum

This section consists of all the lessons and projects you need to complete in order to receive your certificate.

3 PARTS
14 PROJECTS

1

PART 1

Computer Vision and Deep Learning

In this term, you'll become an expert in applying Computer Vision and Deep Learning on automotive problems. You will teach the car to detect lane lines, predict steering angle, and more all based on just camera data!

- Project: Finding Lane Lines on the Road
- Project: Traffic Sign Classifier
- Project: Behavioral Cloning
- Project: Advanced Lane Finding
- Project: Vehicle Detection and Tracking

Estimated time: 92 days

2

PART 2

Sensor Fusion, Localization, and Control

In this term, you'll learn how to use an array of sensor data to perceive the environment and control the vehicle. You'll evaluate sensor data from camera, radar, lidar, and GPS, and use these in closed-loop

controllers that actuate the vehicle.

- Project: Extended Kalman Filters
- Project: Unscented Kalman Filters
- Project: Kidnapped Vehicle
- Project: PID Controller
- Project: Model Predictive Control

Estimated time: 92 days

3

PART 3

Path Planning, Concentrations, and Systems

In this term, you'll learn how to plan where the vehicle should go, how the vehicle systems work together to get it there, and you'll perform a deep-dive into a concentration of your choice.

- Project: Path Planning Project
- Project: Semantic Segmentation
- Project: Functional Safety of a Lane Assistance System
- Project: Programming a Real Self-Driving Car

Estimated time: 91 days