

Self Driving Car Engineer Nanodegree

Weekly Outline

	Week #	Material to Cover
Term 1	First Day	<ul style="list-style-type: none"> Welcome Join Slack and Forums Career Lessons/Projects are optional
	Week 1	<ul style="list-style-type: none"> Computer Vision Fundamentals
	Week 1	Project 1: Finding Lane Lines
	Week 2	<ul style="list-style-type: none"> Intro to Neural Networks
	Week 3	<ul style="list-style-type: none"> Mini Flow Intro to TensorFlow
	Week 4	<ul style="list-style-type: none"> Deep Neural Networks Convolutional Neural Networks
	Week 5	<ul style="list-style-type: none"> LeNet for Traffic Signs Work on project
	Week 6	Project 2: Traffic Sign Classifier
	Week 7	<ul style="list-style-type: none"> Keras Transfer Learning
	Week 8	<ul style="list-style-type: none"> Work on project
	Week 9	Project 3: Behavioral Cloning
	Week 10	<ul style="list-style-type: none"> Advanced Techniques for Lane Finding
	Week 11	Project 4: Advanced Lane Finding
	Week 12	<ul style="list-style-type: none"> Machine Learning and Stanley Support Vector Machines Decision Trees Object Detection
	Week 13	Project 5: Vehicle Detection and Tracking
	Week 14	<ul style="list-style-type: none"> Finish outstanding projects or lessons
	End of Term	
	Term Break	Careers Lessons: <ul style="list-style-type: none"> Research Your Career Options Networking Github and Collaboration

	Week #	Material to Cover
Term 2	First Day	<ul style="list-style-type: none"> Welcome Join Slack project channels
	Week 1	<ul style="list-style-type: none"> Introduction and Sensors Kalman Filters
	Week 2	<ul style="list-style-type: none"> C++ Checkpoint Two Dimensional Robot Motion and Trigonometry
	Week 3	<ul style="list-style-type: none"> Lidar and Radar Fusion with Kalman Filters in C++
	Week 4	Project 1: Extended Kalman Filter
	Week 5	<ul style="list-style-type: none"> Unscented Kalman Filters
	Week 6	Project 2: Unscented Kalman Filter
	Week 7	<ul style="list-style-type: none"> Intro to Localization Localization Overview Markov Localization
	Week 8	<ul style="list-style-type: none"> Motion Models Particle Filters Implementation of a Particle Filter
	Week 9	Project 3: Kidnapped Vehicle Project
	Week 10	<ul style="list-style-type: none"> PID Control
	Week 11	Project 4: PID Controller Project
	Week 12	<ul style="list-style-type: none"> Vehicle Models Model Predictive Control
	Week 13	Project 5: Model Predictive Control
	Week 14	<ul style="list-style-type: none"> Finish outstanding projects or lessons
	End of Term	
	Term Break	Careers Lessons: <ul style="list-style-type: none"> LinkedIn Review Github Profile Review Resume Review Udacity Professional Profile Review

	Week #	Material to Cover
Term 3	First Day	<ul style="list-style-type: none"> Welcome Join Slack project channels
	Week 1	<ul style="list-style-type: none"> Search Prediction
	Week 2-3	<ul style="list-style-type: none"> Behavior Planning Trajectory Generation
	Week 4	Project 1: Path Planning
	Week 5	<p>Depending on your elective choice</p> <p><i>Semantic Segmentation</i></p> <ul style="list-style-type: none"> Advanced Deep Learning Fully Convolutional Networks <p><i>Functional Safety</i></p> <ul style="list-style-type: none"> Intro to Functional Safety Safety Plan Hazard Analysis and Risk Assessment
	Week 6	<p>Depending on your elective choice</p> <p><i>Semantic Segmentation</i></p> <ul style="list-style-type: none"> Scene Understanding Inference Performance <p><i>Functional Safety</i></p> <ul style="list-style-type: none"> Functional Safety Concept Technical Safety Concept Functional Safety at the Software and Hardware Levels
	Week 7	<ul style="list-style-type: none"> Work on project Find final project team if you have not already
	Week 8	<p>Project 2: Elective</p> <ul style="list-style-type: none"> Functional Safety Semantic Segmentation
	Week 9	<ul style="list-style-type: none"> Autonomous Vehicle Architecture Intro to ROS
	Week 10	<ul style="list-style-type: none"> Packages and Catkin Workspaces Writing ROS Nodes
	Week 11-12	Project 3: System Integration
	Week 13	<ul style="list-style-type: none"> Submit graduation request
	End of Term	
	Term Break	<p>Careers Lessons:</p> <ul style="list-style-type: none"> Cover Letter Review Github Profile Review (Repeat) Apply to Jobs Rehearse for interviews