Introduction to Intelligent Vehicles
[14. Summary]

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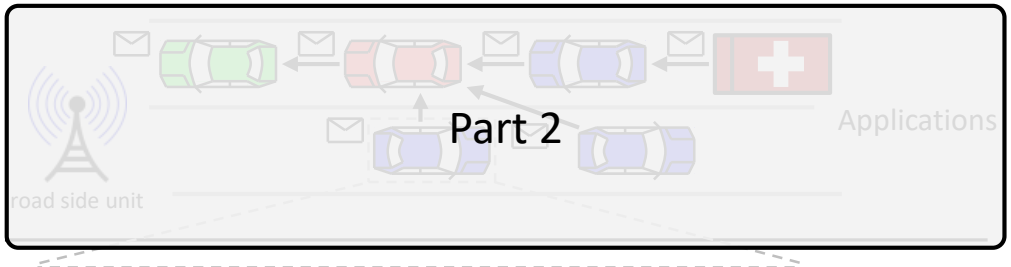
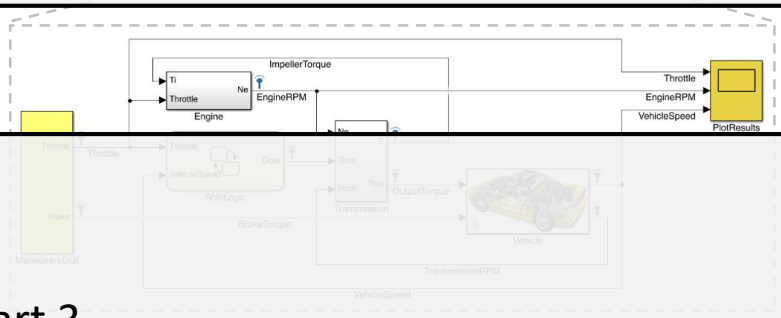
Calendar

W1	Feb 20	[0] Course Introduction [1] System Architecture	
W2	Feb 27	[2] Timing Analysis I	HW1 Posted
W3	Mar 5	[3] Timing Analysis II	
W4	Mar 12	[4] System Design	
W5	Mar 19	[5] Advanced Driver-Assistance Systems [6] Intersection Management	HW1 Due HW2 Posted
W6	Mar 26	[6] Intersection Management	
W7	Apr 2	[7] Connectivity / Appendix	HW2 Due
W8	Apr 9	Midterm	
W9	Apr 16	Midterm Discussion [8] Sensing and Perception / Appendix	
W10	Apr 23	[9] Planning and Control / Appendix	
W11	Apr 30	[10] Verification / [11] Security	
W12	May 7	[11] Security / [12] Edge Computing [13] Certification / [14] Summary	
W13	May 14	Quiz / Project Presentation	
W14 / W15	May 21 / 28	Project Presentation	
W16	Jun 4	Project Presentation	Project Report Due

Lecture Plan





Vehicle Functionality

Sensing | Perception | Planning and Decision | Control | Actuation

Radar	Segmentation	Route Planning	Steering Control	Engine
Lidar	Object Detection	Behavior Planning	Torque Control	Brake
Camera	Object Tracking	Motion Planning	Emission Control	Wheel
GPS	Localization	Prediction	Energy Management	Light

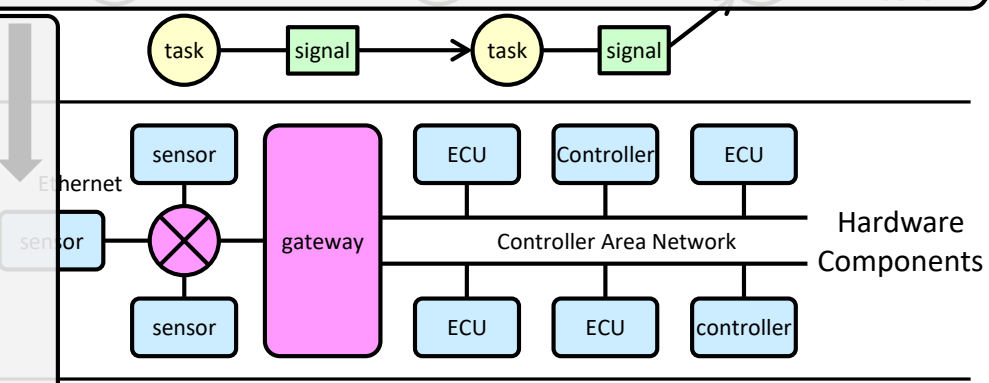
Part 3

Software Tasks

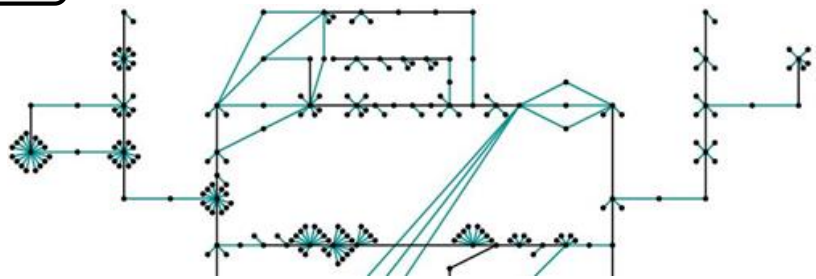
(Operating System)

Hardware Platform, e.g., Electronic Control Unit (ECU)

Part 1



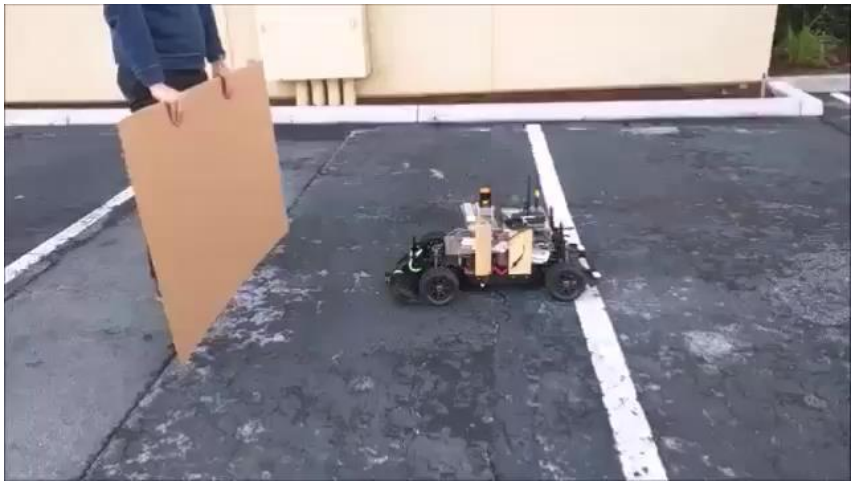
Hardware Components



Physical Layout

Discussion

- When will autonomous driving become reality?
  - Technology
  - Cost
  - Law and regulation
  - Human comfort
  - Philosophy



Summary

- Timing
  - Timing analysis
  - Scheduling (complete things in time and control timing)
- Optimization
  - Objectives and constraints
  - Existing methodologies and tools
- Applications and intelligent technology
  - Motivations and reasoning
    - Different philosophies?
  - So many sub-systems (in the world)
    - Software will become more and more important
  - Integration (of sub-systems, teams, and people)
    - Do things in an organized and systematic way!

Thanks!

Remember Project Presentation and Report