

Software Architecture

Course 1, Module 2, Lesson 3

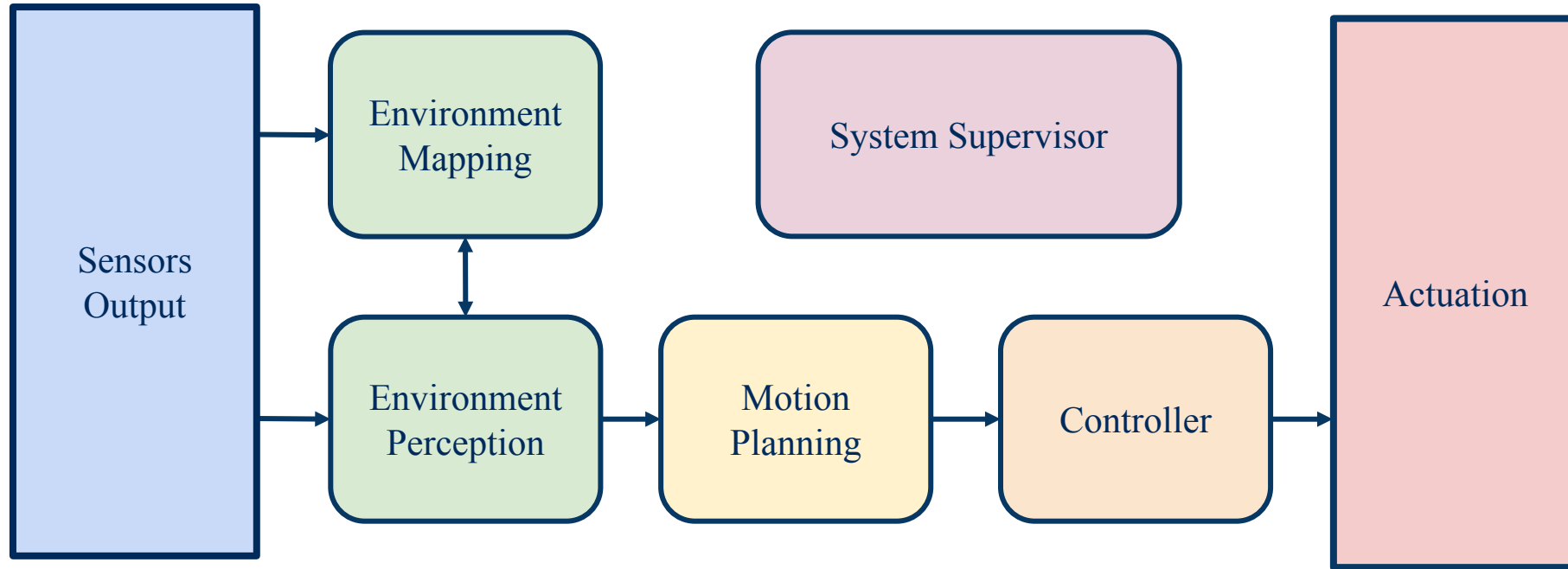


UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Learning Objectives

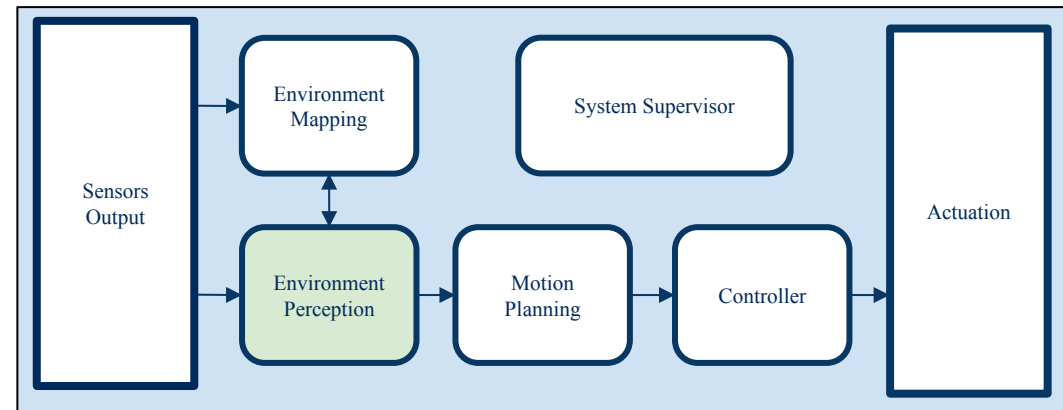
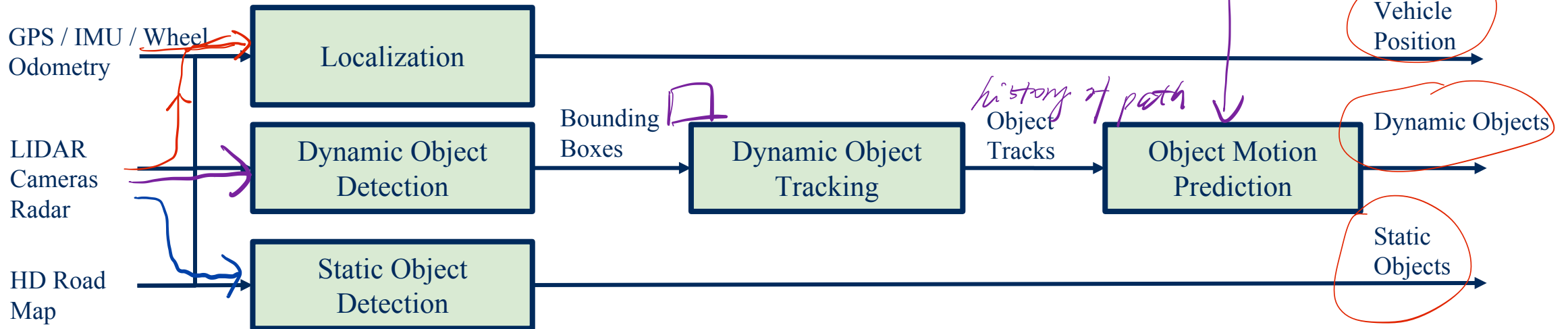
- Describe the basic architecture of a typical self-driving software system
- Identify the standard software decomposition
 - Environment Perception
 - Environment Mapping
 - Motion Planning
 - Controller
 - System Supervisor

Software Architecture | High-level

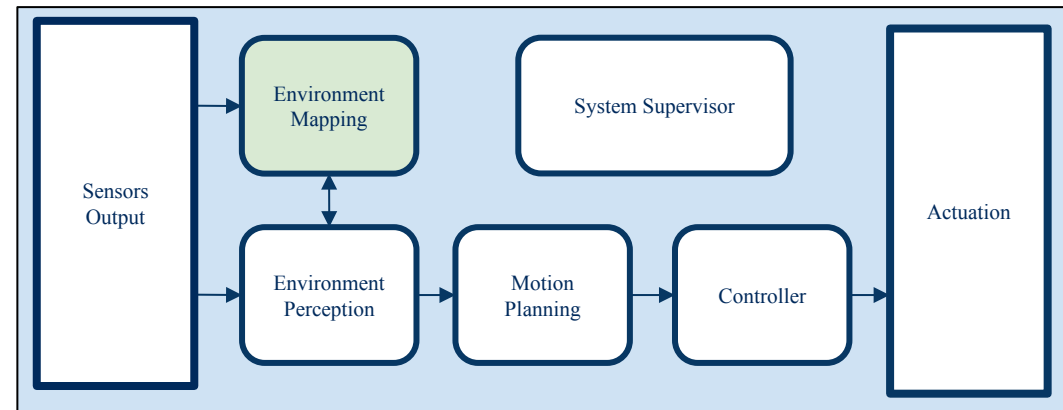
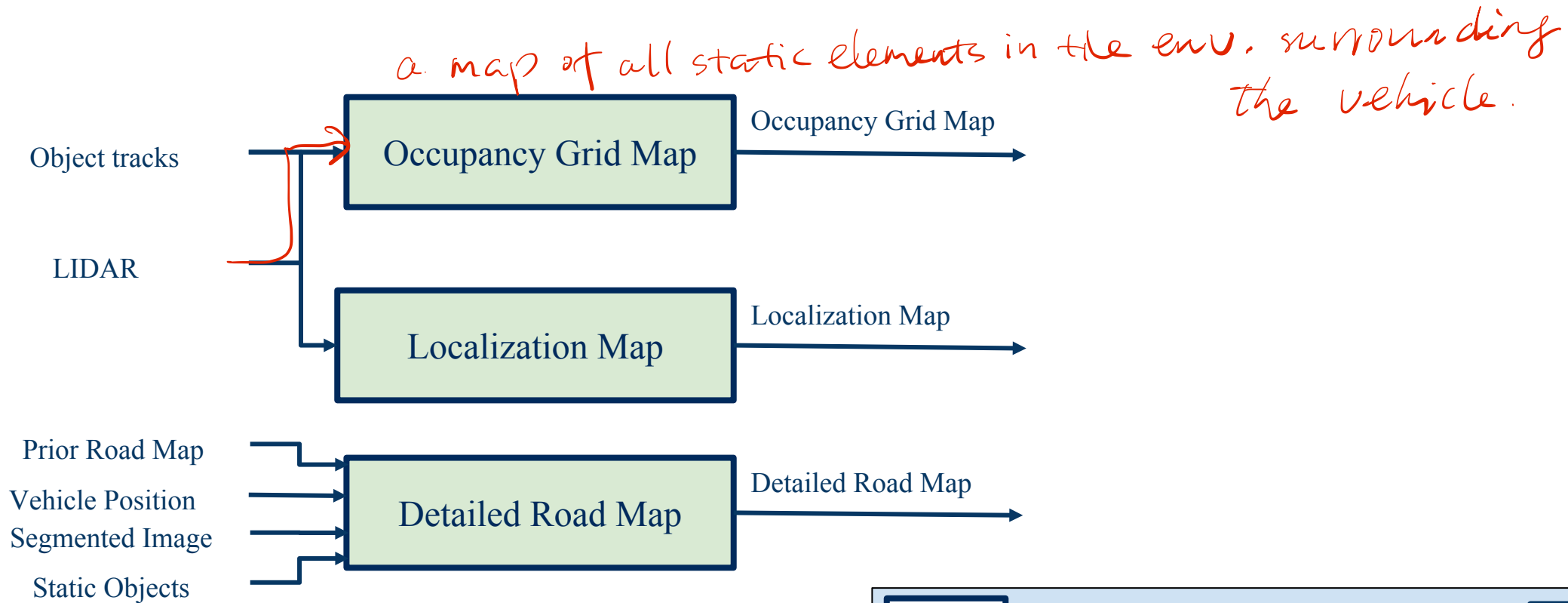


Software Architecture | Environment Perception

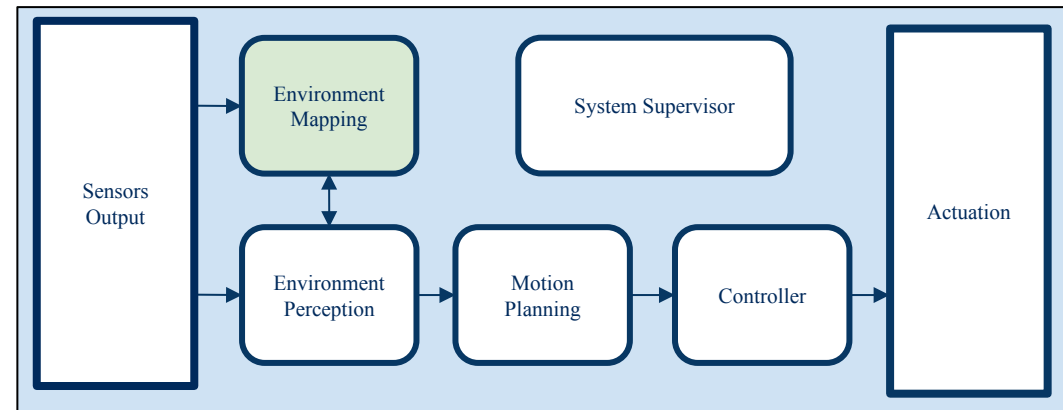
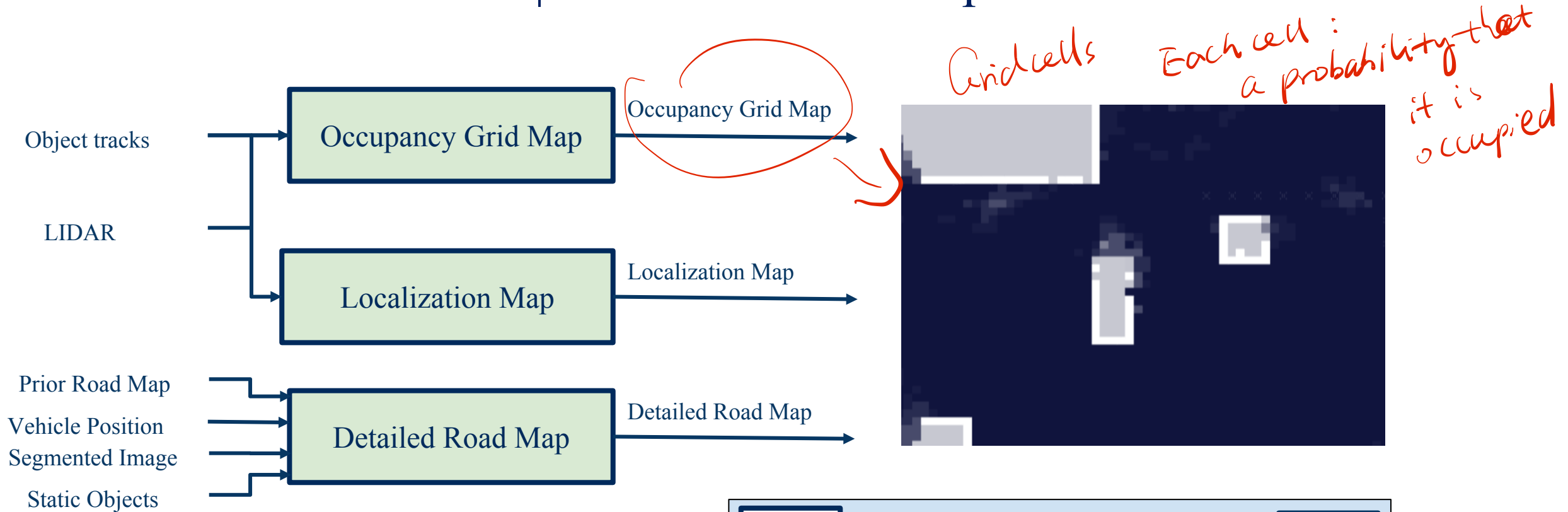
Inputs



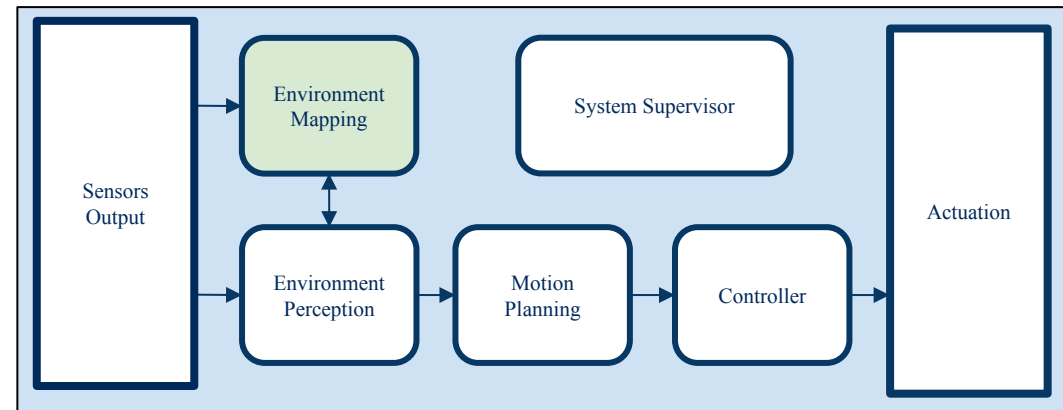
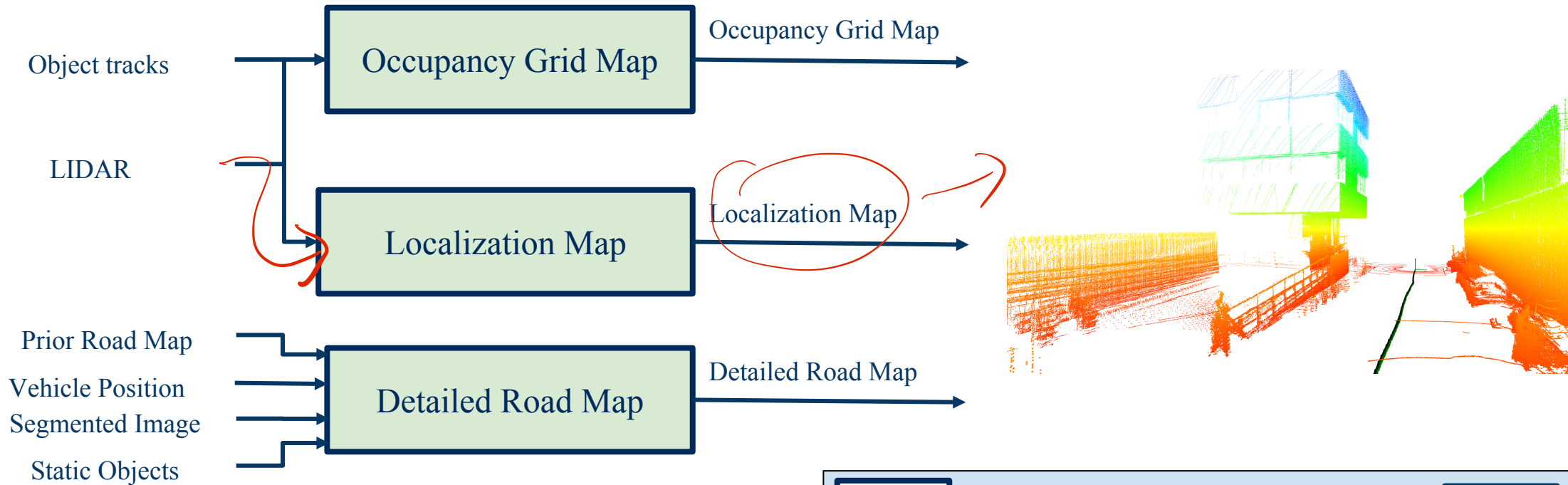
Software Architecture | Environmental Maps



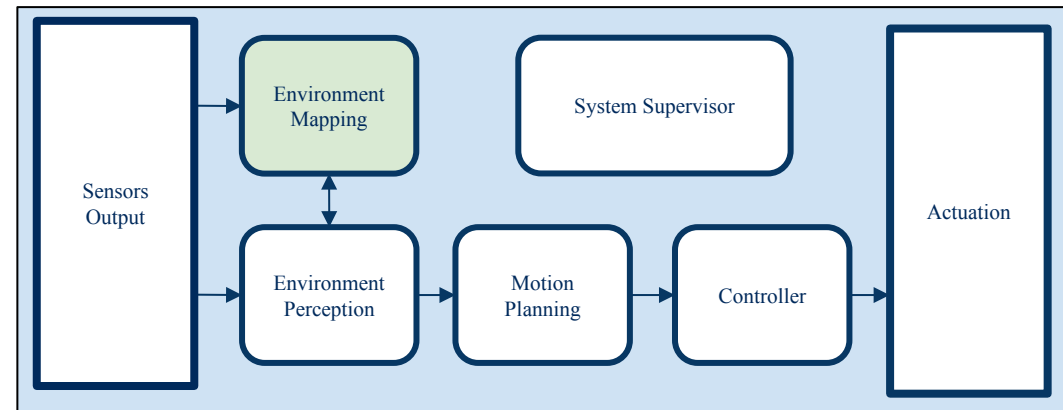
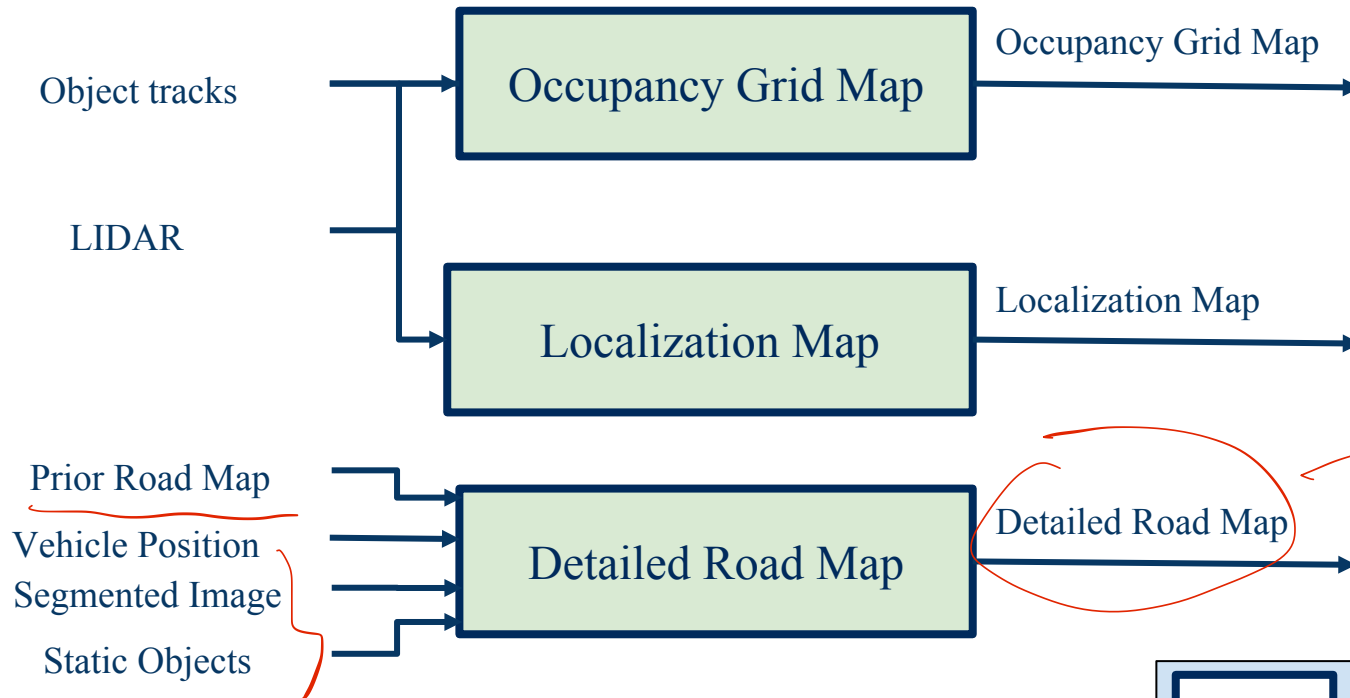
Software Architecture | Environmental Maps



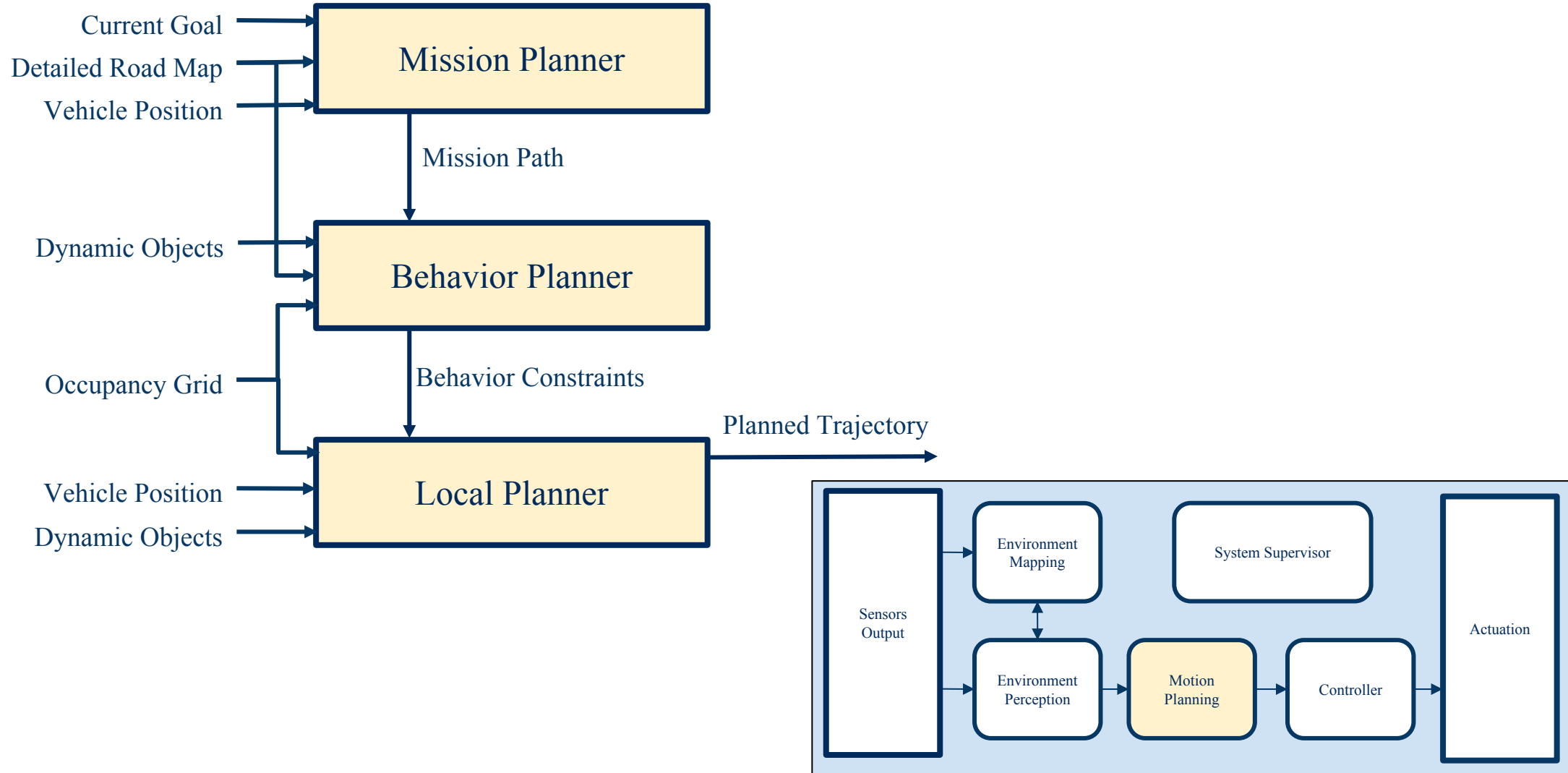
Software Architecture | Environmental Maps



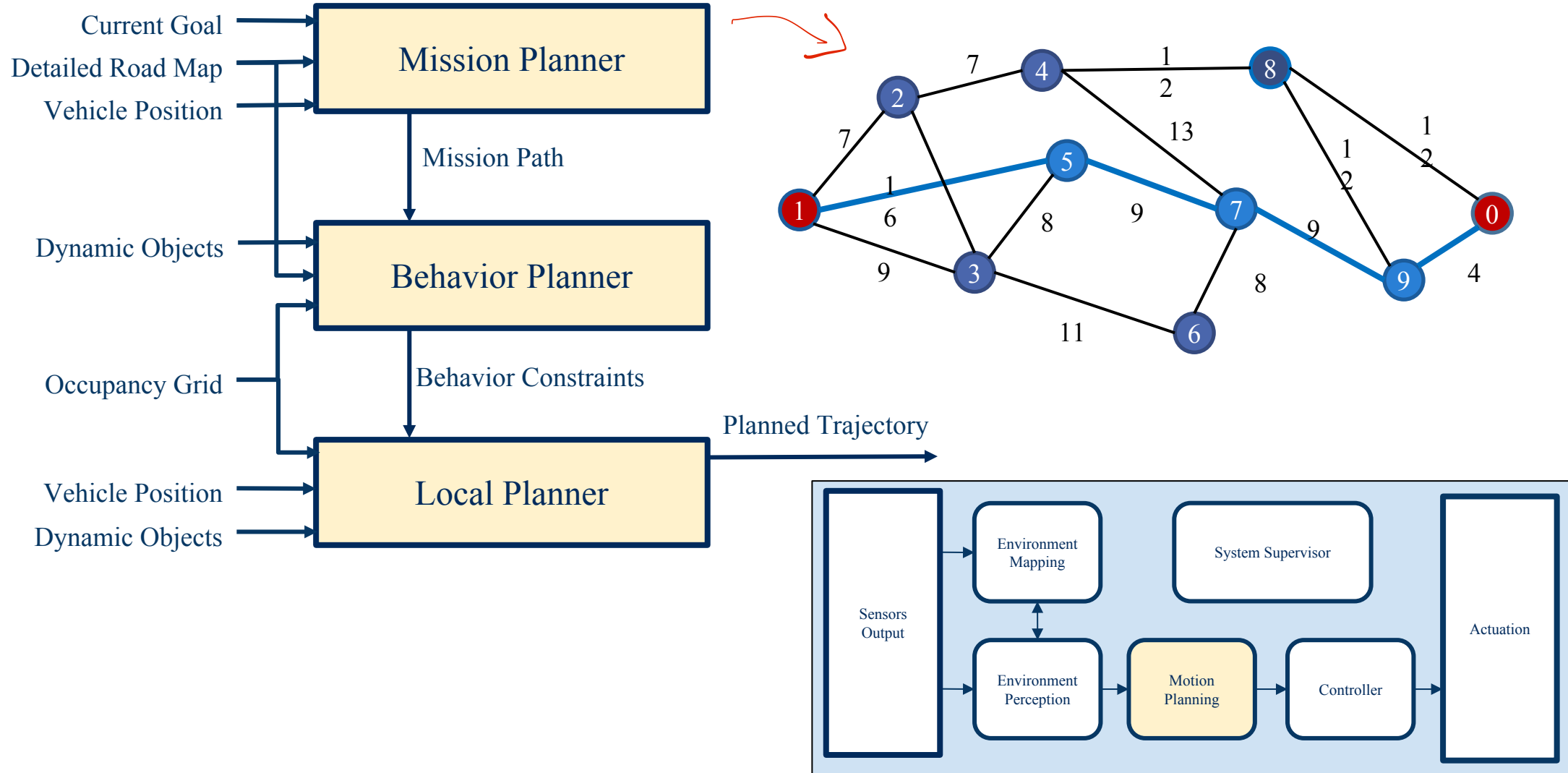
Software Architecture | Environmental Maps



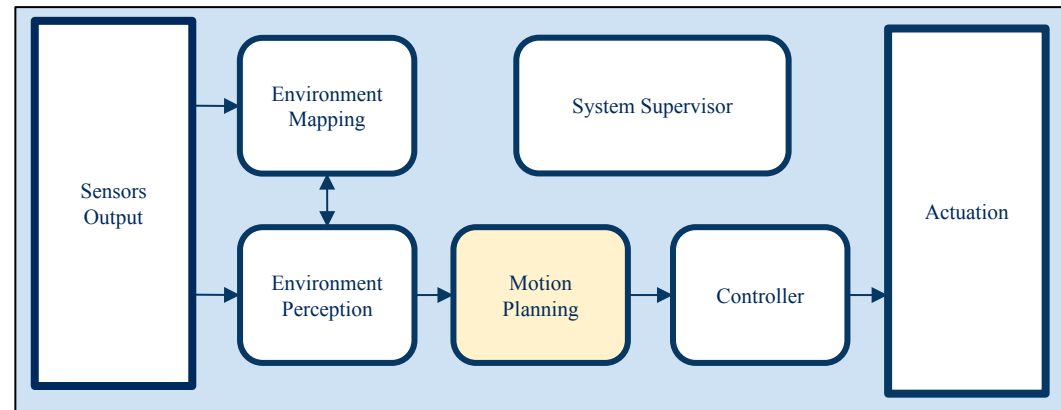
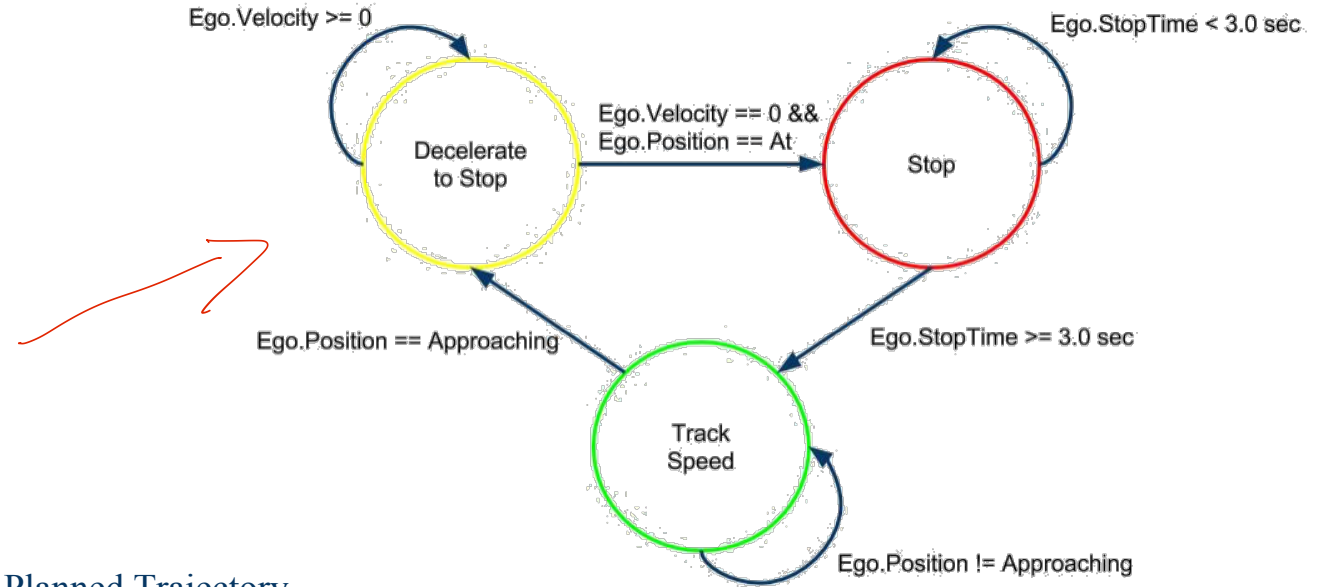
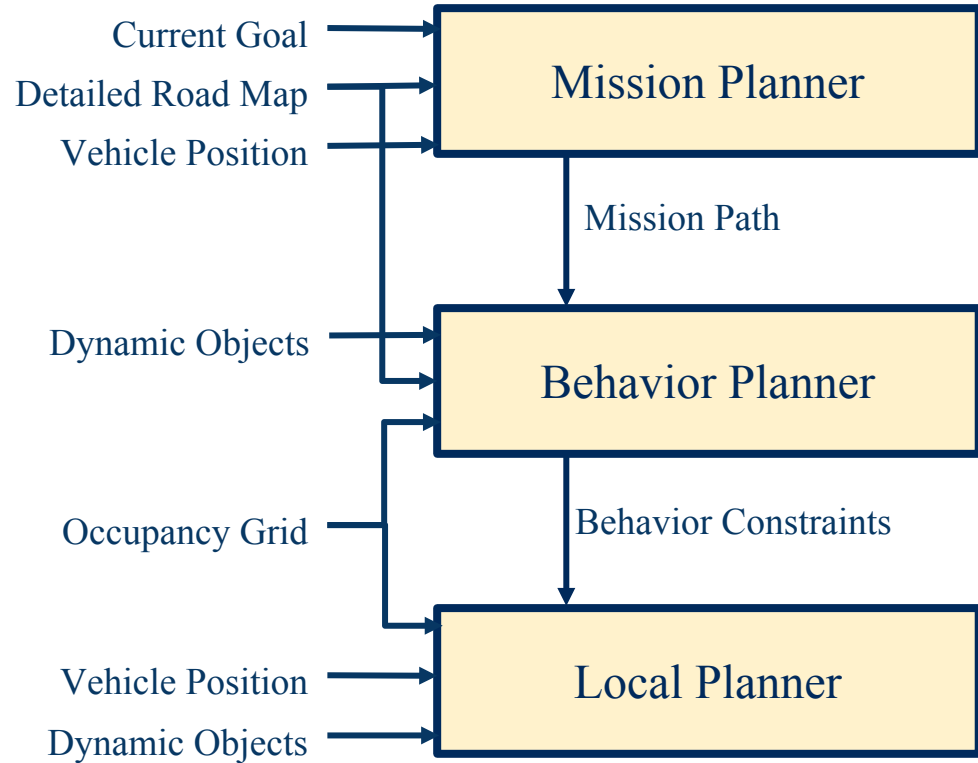
Software Architecture | Motion Planning



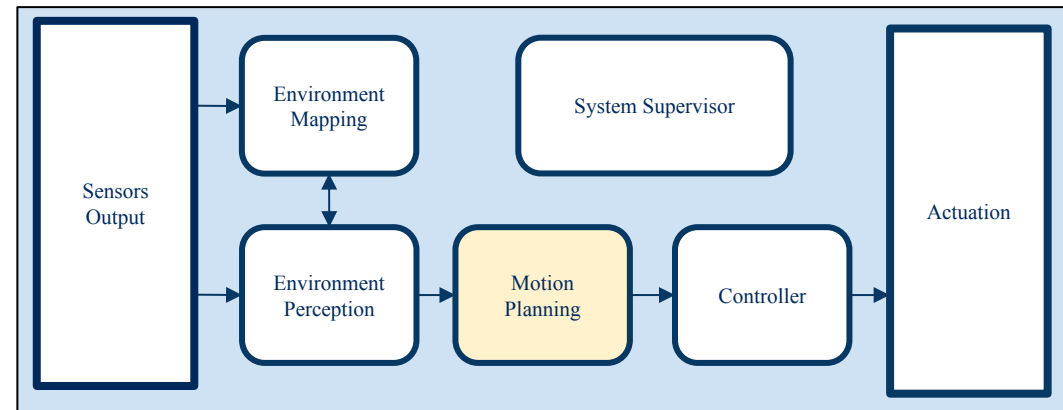
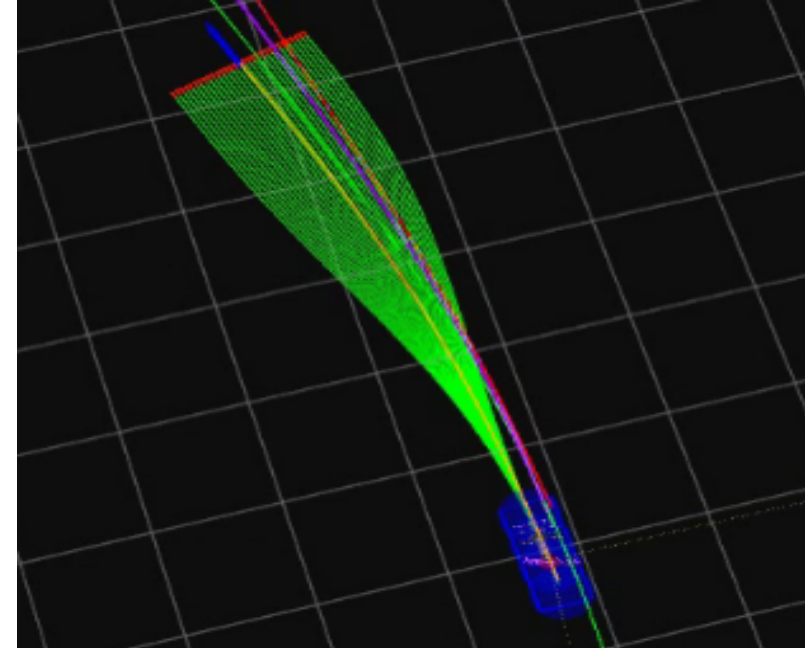
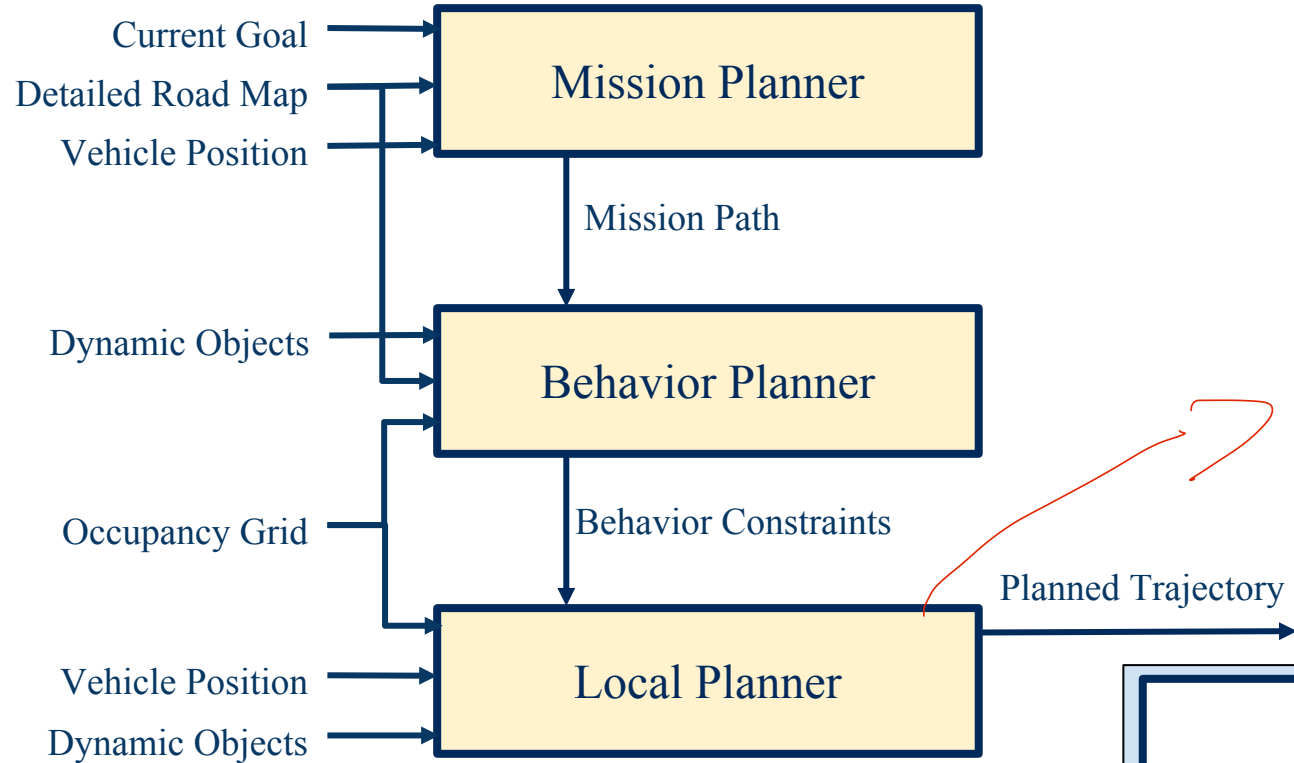
Software Architecture | Motion Planning



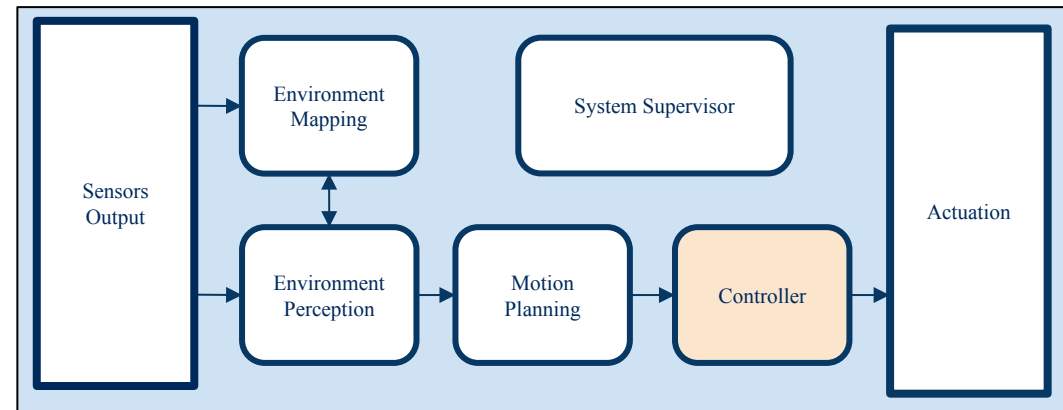
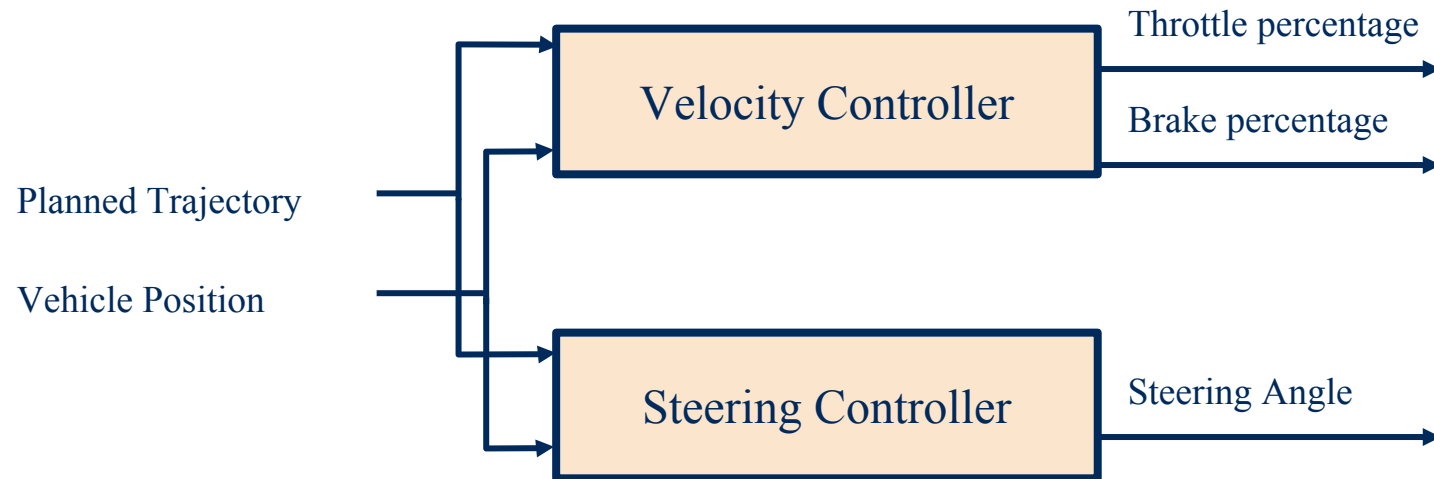
Software Architecture | Motion Planning



Software Architecture | Motion Planning

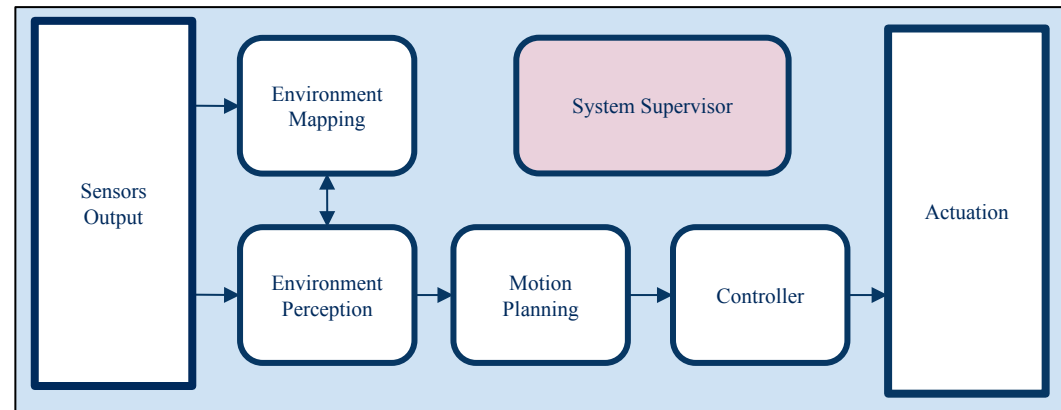
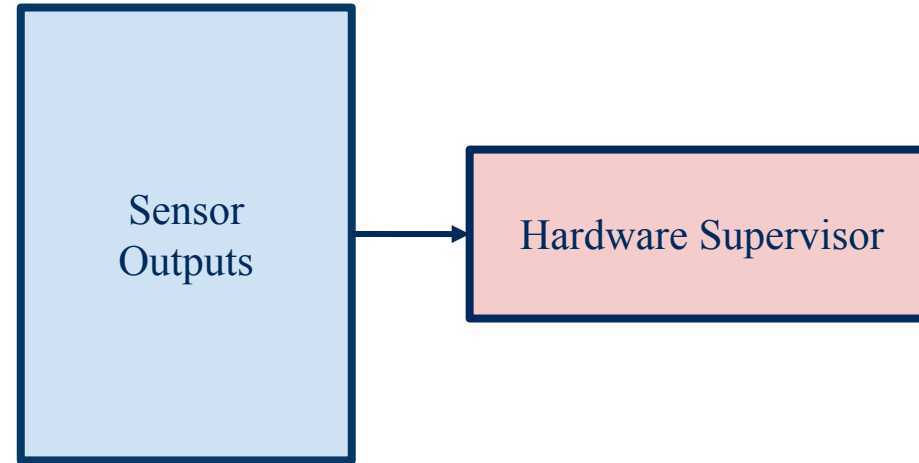
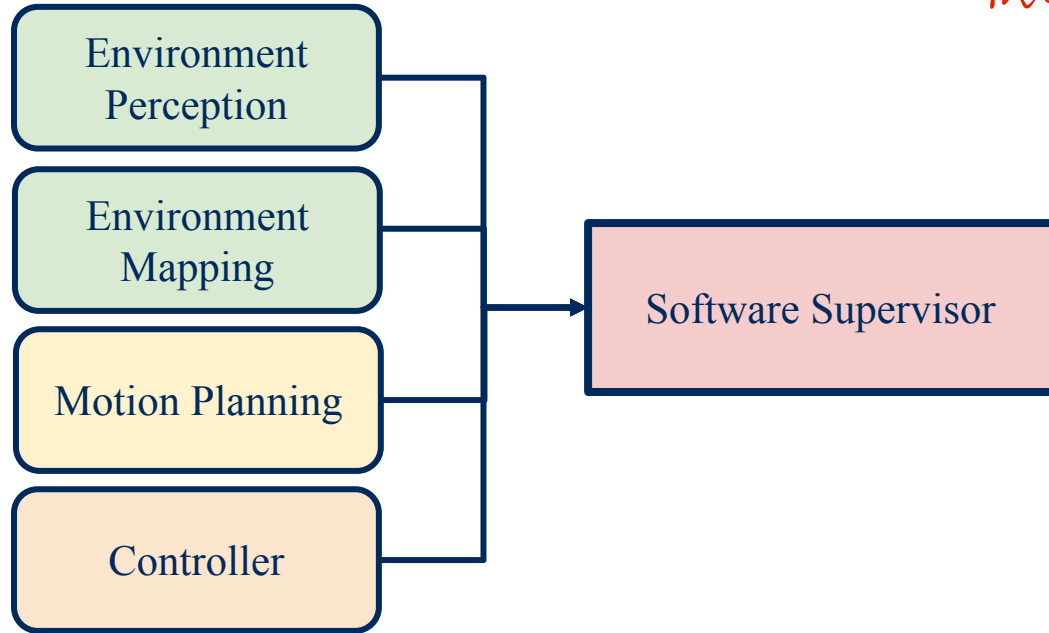


Software Architecture | Vehicle Controller



Software Architecture | System Supervisor

monitors all aspects of the autonomous car



Summary

- Describe the basic architecture of a self-driving software system
 - Environment Perception
 - Environment Mapping
 - Motion Planning
 - Controller
 - System Supervisor
- Next: Closer look at Environment Mapping