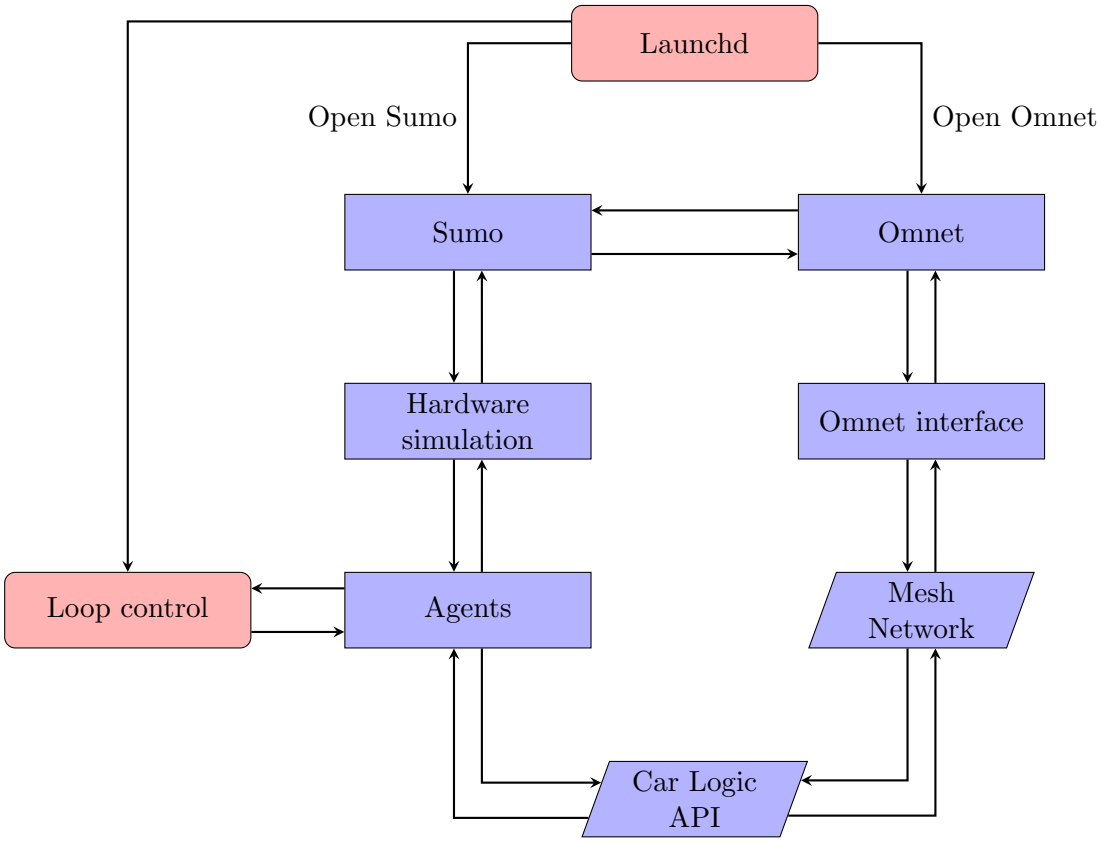
Car Logic Architecture



1. Launchd: The first thing to run. This will be a python script that opens up the sumo simulation, opens omnet simulation, connects them with veins, and then launches the loop controller.

2. Sumo: A sumo road simulation. See tutorials for more.

3. Omnet: A omnet network simulation. See tutorials for more.

4. Hardware simulation: This code will interpret the "World" view that sumo gives, and will return what is visible from any one car. Will emulate the Autonomous driver component of the final implementation, gives abstact information, not "raw". Also accepts abstract requests, such as "Switch lanes", just as the Autonomous Driver Would.

5. Omnet interace: Abstract out the omnet specific commands

6. Mesh network: Control connections and message handeling. Generally handles all of the mesh network specific work.

7. Car Logic API: a standard set of methods that the agent can interact with to join and contribute to the swarm of cars on the road.

8. Agents: A swappable module, each representing a different manufacturer implementation of the Car Logic API, showing that different designs can all work using the API. The agent will 1) request information from the hardware simulation 2) get any new messages from the car logic api 3) decide what it wants to do 4) broadcast any relevant information to other cars 5) request specific manuvers from the hardware simulation.

9. Loop Control: This will orchistrate the whole simulation. It will go through each of the individual agents, each one tied to a specific car, and allow that agent to do one full loop of operations. Once all agents have completed an iteration, this will step both the sumo and omnet sims.