MPA - Modeling and Programming an Automated Intersection

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Job description: Imagine driving through intersections without traffic lights, where your car decides when to cross the intersection and how fast it should go. No traffic lights nor STOP signs (saves energy and waiting time), no collisions either (saves repairs and lives). In this project you will choose aspects of an automated intersection that you could model (is the control centralized or distributed? are all cars equipped or only some? what types of sensors/actuators do you assume present? what type of road infrastructure (e.g., internet connectivity for all cars?) do you assume?), and corresponding questions to be answered (collision avoidance, energy/time savings, deadlock avoidance, fairness, ...). You will choose one or more formalisms and concrete languages/tools to model these aspects and analyze the properties.