

The background features several thin, light-colored lines that form abstract, angular shapes, resembling stylized buildings or architectural elements. These lines are scattered across the dark blue background, with some extending from the edges towards the central text box.

Simulating Autonomous Vehicles in Traffic

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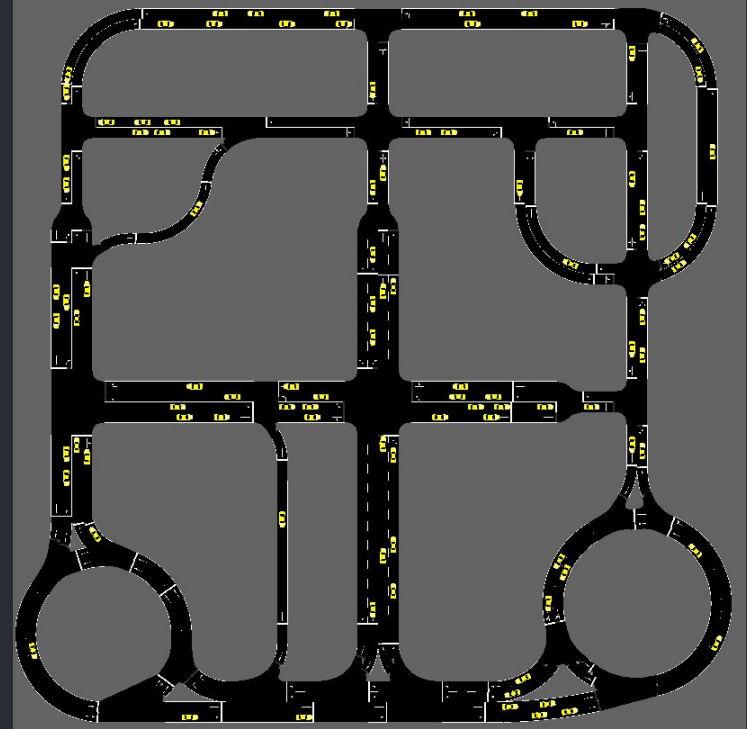
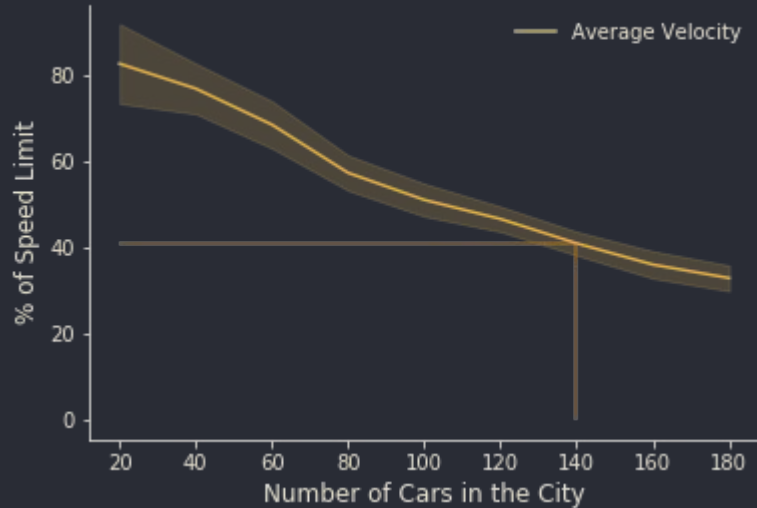
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Impacts of Traffic Density

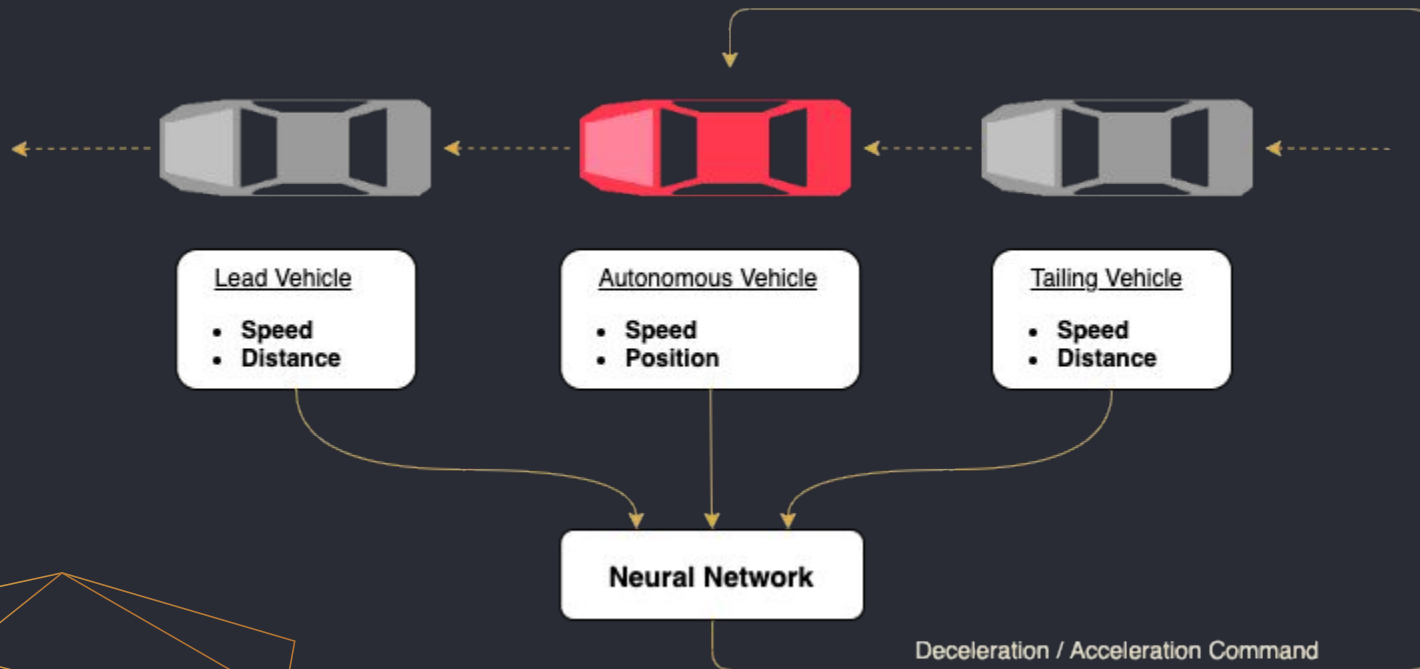
- Increased Commute Time
- Increased Fuel Consumption

Impacts of Traffic Density

- Increased Commute Time
- Increased Fuel Consumption



Deep RL Vehicle Model



Tying it All Together

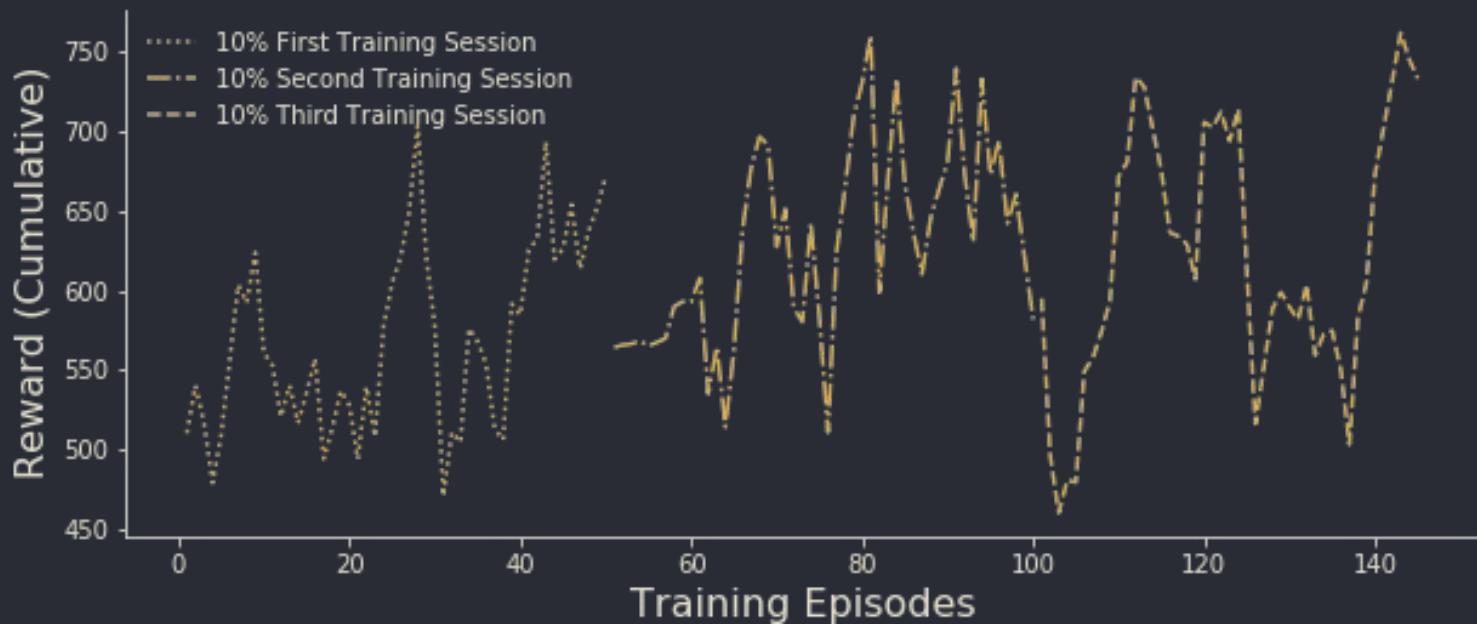


Experiment Results

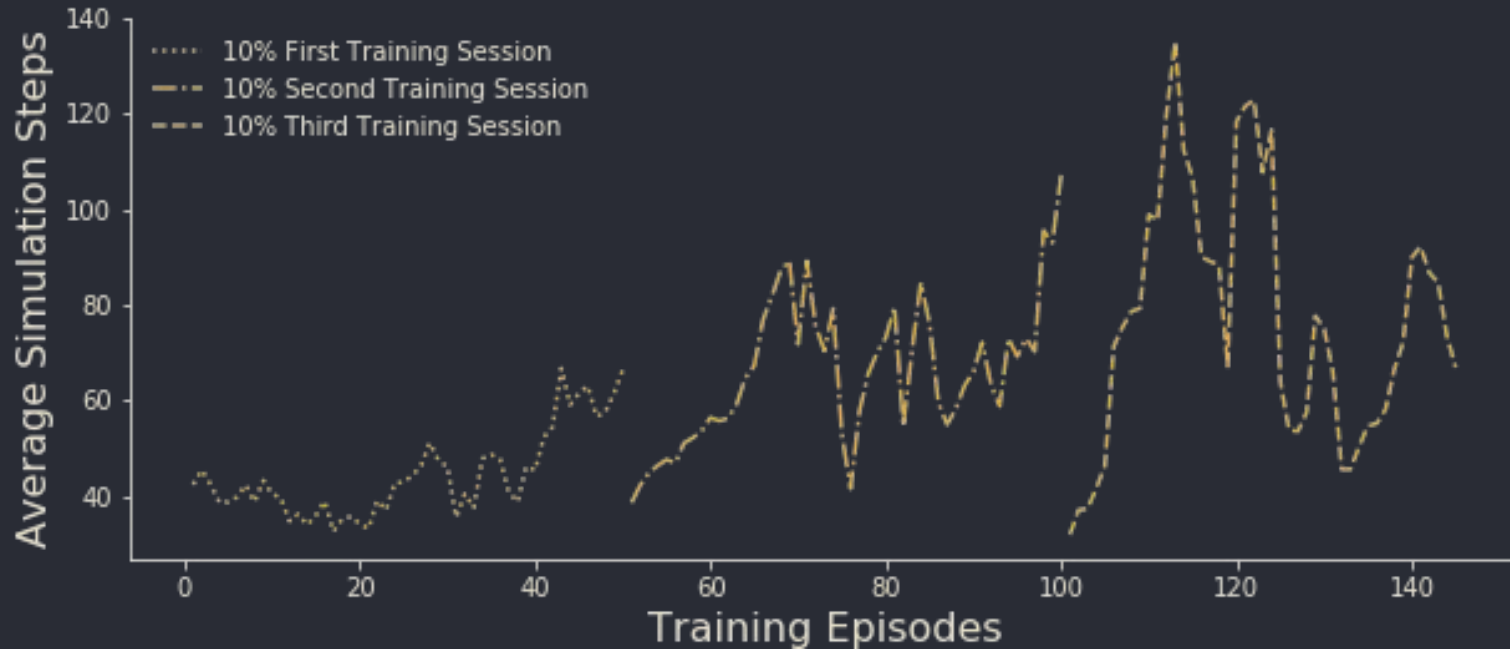


$$Reward = 1 - \sqrt{\frac{(V_0 - targetV_0)^2 + (V_1 - targetV_1)^2 + \dots}{V_0^2 + V_1^2 + \dots}}$$

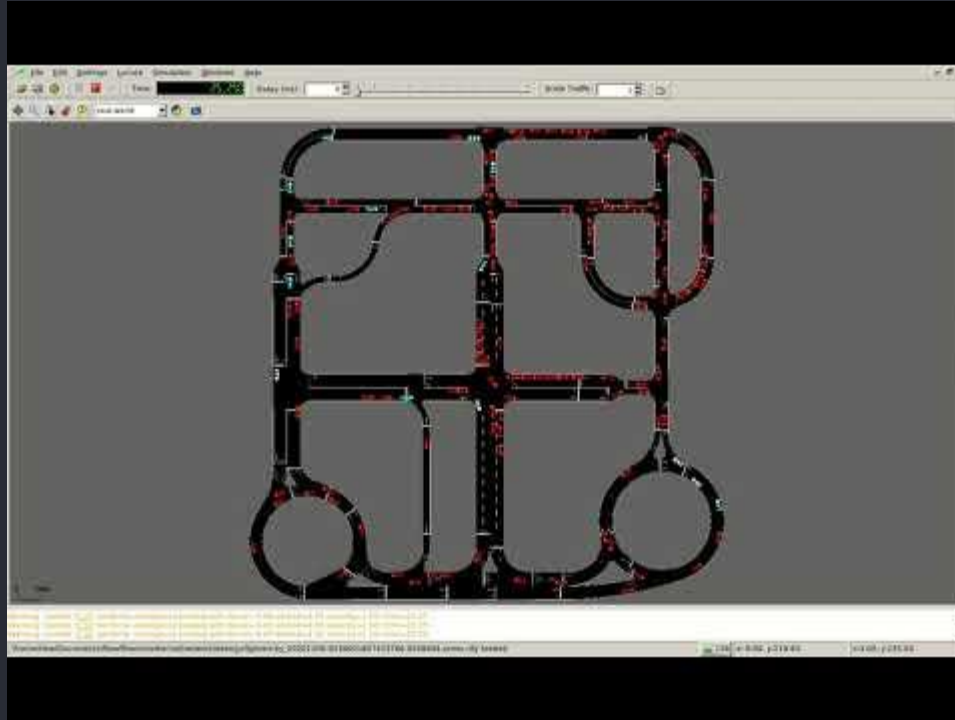
Experiment Results: Continuing the Trials



Experiment Results: Run Times



The Simulation



Final Thoughts

- Less is More (except for runtime)
- PPO vs APPO
- Federated Learning + Autonomous Vehicles

Future Work



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The background features a dark navy blue color with several thin, light gold lines forming abstract geometric shapes, primarily triangles and polygons, scattered across the frame. A large, thin gold rectangular border is centered on the slide, enclosing the text.

Questions?