# CARBench v0.5

**Point-of-Contact:**

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Similar to [MAVBench](https://github.com/harvard-edge/MAVBench), which is applicable in the context of drones, there is a growing need to develop benchmarks for autonomous cars. To this end, this project will involve developing a suite of applications similar to MAVBench’s search and rescue and so forth.

The simulation platform for cars already exists. Checkout [AirSim](https://microsoft.github.io/AirSim/docs/using_car/) with support for cars. We need applications and autonomy built into the cars.

**Deliverables:**

* Description of the application(s) developed
* Description of target application(s) that should be developed going forward
* Description of the algorithms used and why
* Code to demonstrate working application
* Explanation of the challenges faced
* Basic performance analysis / measurement of the algorithms.

**Skills needed:**

* Programming in C++/C
* Some familiarity with ROS would be nice
* Familiarity with AirSim would be nice

**Team members:**

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**Resource List:**

[MAVBench](https://github.com/harvard-edge/MAVBench): B. Boroujerdian, H. Genc, S. Krishnan, W. Cui, A. Faust, and V. J. Reddi, “MAVBench: Micro Aerial Vehicle Benchmarking,” *arXiv:1905.06388v2 [cs]*, June 1 2019.

[AirSim](https://microsoft.github.io/AirSim/docs/using_car/): S. Shah, D. Dey, C. Lovett, and A. Kapoor, “Airsim: High-fidelity visual and physical simulation for autonomous vehicles,” CoRR, vol. abs/1705.05065, 2017.

[Apollo](http://apollo.auto/)

[Unreal](https://www.unrealengine.com/en-US/what-is-unreal-engine-4)

[ROS](https://www.ros.org/)