Project

In our previous works [1], we proposed a distributed approach for attack resilient platooning against false data injection in the communication channels. In this work we focused on a one dimensional problem i.e., we focused on the longitudinal dynamics, providing crucial properties such as safety and string stability. However, in [1] we neglected the lateral dynamics, since we assumed that the platoon was going straight. In this project we want to synthesize a controller that enable the platoon to follow non-straight paths without running into problems of lateral string instability and without losing the longitudinal string stability of the platoon. The overall scheme should be able to be resilient to false data injections in the communication channels.

[1] L. Lyons, M. Boldrer and L. Ferranti, "Distributed Attack-Resilient Platooning Against False Data Injection", in IEEE RSJ International Conference on Intelligent Robots and Systems (IROS), 2023, Submitted