Contains the reports of my research as part of the Safe AI Lab and the Bot Intelligence Group

1. Advanced decision making by combining Hamilton Jacobi reachability and path planning for cyclist vehicle navigation - BotIntelligenceGroupThesis
- Computed a backward reachable unsafe set and corresponding value function for all cyclists using Hamilton Jacobi Reachability
- Updated the reward function in the path planning algorithm using the afore mentioned value function and evaluated resulting trajectories in terms of both safety and completeness

2. Navigating a virtual agent at traffic intersections (roundabouts) - SafeAILabReport
- Trained a maximum entropy inverse reinforcement learning algorithm to navigate a virtual agent by using the Stanford drone dataset as ground truth
- Demonstrated superiority of the latter over a Q network at collision avoidance and navigation