Turn signals are an integral part of modern vehicles. However, signaling devices are not mandatory for bicycles. This has led to a reduced visibility of bicycles on the road as they have to share the road with much larger vehicles and thus leads to a safety concern for bicycle riders. The community at large acknowledges this safety hazard and some prior works have tried to address it with user triggered signaling devices.

This project focuses on a signaling device that is fully automated and has extended usability. The input device is the bicyclist’s cell phone which sends data to the turn signal through a custom app. The app uses the user’s riding behavior captured by the phone’s motion sensors and uses machine learning to improve the reliability of automatically detecting situations and providing signaling suggestions. However, with a cell phone used as the input device, storage space is limited and therefore all machine learning must be done in real-time. This work will focus on this limited storage aspect and describes the algorithm and decisions made when the user profile is updated with data learned over time.