CYCLIST STATE PREDICTION SYSTEM

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Dissertation submitted in partial fulfillment of the requirements for the Degree MSc in Computer Science specializing in Software Architecture.

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DECLARATION

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Prof. G.I.U.S Perera Date

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ABSTRACT

In a world moving more towards green initiatives, cycling has become a major way of transportation for many people across the world. Due to the rapid growth of automobile usage, cyclists are considered as one of the most vulnerable groups of road users. Even though there are various Collision avoiding systems available right now, most of them focus on pedestrians and highway driving scenarios. There are a smaller number of systems that focus on the safety of cyclists. Detecting Cyclists and predicting their intentions real-time may help in increasing cyclist safety in an urban environment. Some existing research require ideal conditions to predict the cyclist state while few are implemented exploiting various constants in the environment. Some research work requires to have known jersey patterns to detect cyclists among other automobile whereas some other work requires the data such as curb position and location to be constant/predefined while the ethnicity of the demography is also considered while it predicts only risky cycling scenarios. This research presents a holistic solution to detect and recognize cyclists in a complex environment without specific user given information focusing on ellipses detection applied to wheel patterns of the cyclists.

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