

Dissertation Defense

for

**Doctoral of Science Degree
in Computer Science**

SRUTHI RACHAMALLA

A Framework For Crypto-Based Monetization Of Driver Behavior With Blockchain

The transportation system places a top priority on driving safety. Most drivers on the road and their actions determine how safe it is to drive. Speed, hard braking, abrupt accelerations, and other aggressive driving behaviors are some of the main safety-compromising elements that could jeopardize human life in the event of a fatality. We presented a driver incentive model that ranks and rewards the driver's daily behavior in order to increase the safety of drivers and other road users. These rewards will come in the form of cryptocurrency tokens. We also examined the cooperative driving (or platooning) scenario. Road safety can be improved by connecting two or more cars together by utilizing vehicular communication technologies. The leader vehicle is crucial as it manages the platoon, establishes communication between vehicles, and performs platoon maneuvers namely Join, Merge, Leave, and Split. As the leader of the platoon has multiple responsibilities than followers, our model rewards more incentives to the leader than to followers. This digital monetization method is accomplished by secure transactions using blockchain.

Friday, October 27, 2023

2:00 - 3:00 pm

**Conference Room (Engineering A-Wing Rm
A307)**