

Context-Aware Passenger Comfort Estimation for Pervasive Mobility Systems

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This paper presents a context-aware system that monitors and predicts passenger comfort in pervasive driving environments, by using in-vehicle sensor data and machine learning. A Neural Network-based model is trained on baseline and then personalised using data gathered from CAN Bus to infer discomfort from driving patterns, such as car braking and cornering. The proposed architecture integrates sensor fusion, user feedback, and visualisation tools, enabling comfort adaptation in real time. Simulations in the CARLA environment demonstrate the system's robustness and adaptability. By focusing on human-centric personalisation and integrating seamlessly with pervasive computing components like mobile UIs and edge-like devices, this research supports future ride-sharing and Robo-Taxi platforms that prioritise comfort as a very important system feature.

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