Computer Networks

Term Project Final Report

Comparative Analysis of Handover Mechanisms in OMNeT++ with Simu5G and INET: Evaluating Ping Pong Rates and RSSI Data Accuracy with and without Kalman Filtering

- Assessing the Impact of Kalman Filtering on Network Stability and Signal Strength Interpretation in Advanced Simulation Environments -

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Student ID: 2017312605

Name: Yosep Kim

Abstract

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This report investigates Vehicular Mobility Management (VMM) in IPv4 networks, focusing on handover mechanisms and RSSI data processing. Utilizing the OMNeT++ simulator with Simu5G and INET, we analyze handover strategies and the impact of RSSI data, enhanced by Kalman filtering. The study involves extracting and preprocessing RSSI data from simulations, then comparing handover and Ping Pong rates with and without Kalman filtering. The results, drawn from ten simulation runs, highlight the effectiveness of Kalman filtering in optimizing VMM handovers.

Keywords : Handover, RSSI, Kalman Filter, Ping-Pong Rate, VMM

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References