



COLLEGE of ENGINEERING
AND PHYSICAL SCIENCES

SCHOOL OF COMPUTER SCIENCE

MSc Defence

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Marshall Asch

A Case Study on the Replicability of the RHPMAN Data Storage Scheme

Chair: Dr. Fangju Wang

Advisory: Dr. Xiaodong Lin

Non-Advisory: Dr. Judi McCuaig

Non-Advisory: Dr. Denis Nikitenko

Abstract:

Mobile ad hoc Networks (MANETs) show promise to reduce the impact of insufficient network infrastructure on remote communities. Data replication and storage schemes are critical components for bridging the gap between academic ideas and feasible real-world applications. However, repeatability of research experiments within the academic field of MANET research must be demonstrated in order to evaluate and develop new potential solutions to the data storage problem and the digital divide. The Replication in Highly Partitioned Mobile ad hoc Networks (RHPMAN) data storage scheme has several appealing characteristics such as partition awareness and a built-in mechanism to disseminate data to disjointed network partitions.

In this thesis we create an open-source implementation of the storage scheme and unsuccessfully replicate the initial experiment, which illustrates a greater problem in MANET research. This was supported through the development of a suite of tools and a framework for conducting MANET experiments.