

# **An Investigation into Location Privacy of Navigation Applications: A Systematic Literature Review**

## **M.Sc. Management of Information Systems**

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### **Abstract**

The rapid technological advancements in location tracking technologies and devices have revolutionized how people consume navigation applications. Historically, navigation was achieved through the use of physical maps and compasses. The emergence of internet connectivity in the 1990s led to map digitization which was the precursor of modern-day navigation applications. Today, navigation applications have become integrated into people's daily lives through the use of smartphones. The smartphone has transformed navigation making travel planning frictionless. The technology used is capable of tracking the user location to an extremely high precision which enables a superior standard of navigation accuracy. While this is advantageous to consumers, it also raises major concerns around the area of consumer privacy, specifically location privacy. Many navigation applications are provided by third-party service operators who capture and continually track user location. This paper uses a Systematic Literature Review to examine how navigation applications calculate travel routes and track user locations. The study analyses the location tracking technologies, devices and underlying systems used. The focus of the paper is to examine the impact navigation applications have on user privacy. The paper identifies the threats to consumer privacy and examines the effectiveness of the privacy protections in place.