

**A STUDY ON USING CONTEXTUAL INFORMATION
TO MODERATE MOBILE NOTIFICATIONS**

Wengappuli Arachchige Charitha Sasanka De Silva

168215H

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Department of Computer Science and Engineering

University of Moratuwa

Sri Lanka

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DECLARATION

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Dr. Indika Perera

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Date

ABSTRACT

At present, people use their smart devices (phones, phablets, tablets, watches, glasses etc.) for much more than mere communication. People just do not send text messages, make calls, or send e-mails. They attend to their bank activities, check the weather information, involve in the stock market trading, and even control their home lighting system using their smart devices. Hence the user experience of a smart device has become more of a personalized experience. “Push Notifications” is a method that the user communicates with smart devices. Push Notifications can range from an alarm alert to weather alert. However, with the increasing number of apps the number of notifications received by a typical user per day had increased several folds in the past few years.

In this research, how such notifications were moderated is discussed. As these notifications cannot be moderated in a generic manner, the users’ requirements and preferences were considered before being moderated. How a typical user reacted to different kinds of situations was first analysed and users’ preferences were considered before the moderation happened. To develop this notification system, current research regarding analysing human behaviour using contextual information gathered from smart devices along with research related to the moderation of Push Notifications were studied. Then using the current research information and the mostly used contextual information were used to create a profile for each individual user and to moderate notifications.

In summary, the research discussed how the notifications were moderated based on different criteria and how user behaviours were useful in doing so. It further discussed the performance and security issues which arose when implementing the solution and the methods used to overcome such boundaries. It also discussed on the architectural aspect of the whole solution. The solution has the capability to moderate incoming notifications based on user preferences and behaviours as well as the notification content while using the abilities of several 3rd party web services.

Keywords: Mobile, Notifications, Context

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LIST OF ABBREVIATIONS

| Abbreviation | Description |
|---------------------|-----------------------------------|
| AMS | Active Map Service |
| API | Application Programming Interface |
| CSV | Comma-Separated Value |
| GPS | Global Positioning System |
| HTML | Hypertext Mark-up Language |
| HTTP | Hyper Text Transfer Protocol |
| IT | Information Technology |
| JSON | JavaScript Object Notation |
| ML | Machine Learning |
| NFC | Near-Field Communication |
| NoSQL | Not only SQL |
| PDA | Personal Digital Assistant |
| POP | Personalized Ontology Profile |
| QR | Quick Response |
| REST | Representational State Transfer |
| RFID | Radio-Frequency Identification |
| RMS | Root-Mean Square |
| SDK | Software Development Toolkit |
| SMS | Short Message Service |
| URI | Uniform Resource Identifier |
| Wi-Fi | Wireless Fidelity |
| WLAN | Wireless Local Area Network |
| XML | Extensible Mark-up Language |