

Mining Minds: An Open source Initiative towards Health and Wellness Platforms

Muhammad Bilal Amin, Wajahat Ali Khan, Asad Masood Khattak, and Sungyoung Lee

Abstract—Open source community lacks platform oriented implementations that are comprehensively designed and built for wellness and healthcare. Therefore, we present Mining Minds, a comprehensive open source platform for healthcare and wellness. This paper provides platform overview and process details adopted by us for its open source implementation and release.

I. INTRODUCTION

Mining Minds is built on the core ideas of digital health and wellness paradigms to enable the provisioning of personalized support [1]. It utilizes the prominent digital technologies such as real-time raw sensory data acquisition, big data, cloud computing, context-awareness, knowledge basis with analytics, and continuous investigation on peoples lifestyle to provide a variety of smart coaching and support services [2].

The motivation of this paper is to introduce Mining Minds platform to the research community for its source code evolution, exposure, and utilization in various health and wellness platforms. Mining Minds version 2.5 has been released under Apache 2.0 license at <https://github.com/ubiquitous-computing-lab/Mining-Minds>.

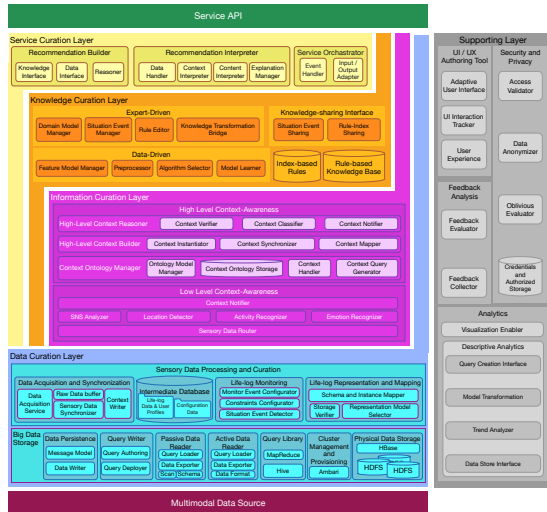


Figure 1. Mining Minds version 2.5 architecture

M. B. Amin is a Korea Research Fellow and Research Professor at Department of Computer Engineering, Kyung Hee University, South Korea. m.b.amin@ieee.org

W A Khan and S. Y. Lee are with the Department of Computer Engineering, Kyung Hee University, South Korea. {wajahat.alikhan,sylee}@oslab.khu.ac.kr

A M Khattak is with the College of Technological Innovation, Zayed University, UAE. asad.khattak@zu.ac.ae

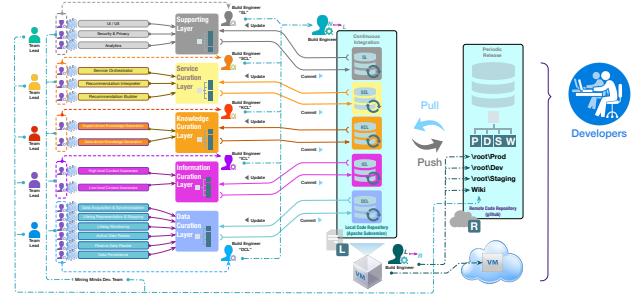


Figure 2. Mining Minds opensource release process

II. METHODOLOGY OVERVIEW

Mining Minds has a layered architecture (Fig 1). Each layer pertains to the abstraction of raw sensory data acquired from multimodal data sources. Its current implementation supports the service scenarios based on activity and nutrition. Moreover, it incorporates user educational and wellness awareness concept in its services. For open source release, the components of the mining minds are designed with software engineering principles of reusability, and extensibility. The iterative process for opensource release of this platform is tightly followed as per research and software industry practices (Fig.2). The project has potential to evolve as a platform that can be reused and extended by the community. Therefore, for its organic growth, it requires proper exposure among the researchers and developers.

Mining Minds next iteration (ver 3.0) will be released in June 2017. It will support a larger set of sensory devices with richer context derivation; furthermore, it will incorporate diabetes as a test case for an end-to-end scenario.

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