Augmented Reality Based Continuous Onboarding Framework

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Abstract

Augmented reality (AR) is a technological field of study that bridges the physical and digital world together with a view to improving user experience. AR holds great potential to change software development process improvement by utilizing a specific set of components. The purpose of this project is guiding the software engineers effectively with the help of augmented reality by providing them interactive communication between their colleagues and the projects.

Keywords: Augmented Reality, Software Engineering, Onboarding

Introduction

Onboarding is the process of integrating and acculturating new employees into the organization. A new approach to onboarding process is continuous onboarding which the adaptation period never stops, it continues as the employee works in the company and it keeps him engaged to the working process.
All developers including juniors should always keep the pace of the process. Even if the incoming software developers are highly skilled and experienced in the sector, lack of knowledge about the new project that they are working on or lack of communication between their new team members may cause demotivation about the new job. Combining the emerging augmented reality technology, we think that, using the virtual components placed on the physical environment, newcomers can easily learn the things about the company, team, and project that they will work.

Solution

Augmented Reality Based Continuous Onboarding Framework is an augmented reality application that will be used in the office environment to increase the communication between the newcomers with former employees and provide effective and efficient orientation process. Also, this system is used especially by Scrum development teams, to make the meetings and processes more effective by using augmented reality technology.
This system runs on Android devices of the company employees. Employees should login to the system by their company accounts. System has 2 main modes which are Orientation Mode and Operation Mode. User scans the unique images in these modes, and information about the scanned image is shown on the panel by combined with augmented reality. Orientation Mode is used for learning more information about the employees to create an easy communication with them.
Operation Mode has two different functions. Learning about people's tasks and shared tasks with the person himself and learning about the tasks of a project by combining the Scrum board of the project with the augmented reality components.

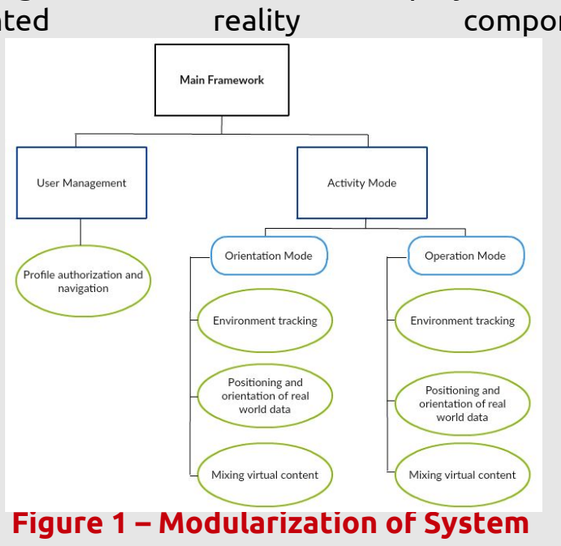

Figure 1 – Modularization of System

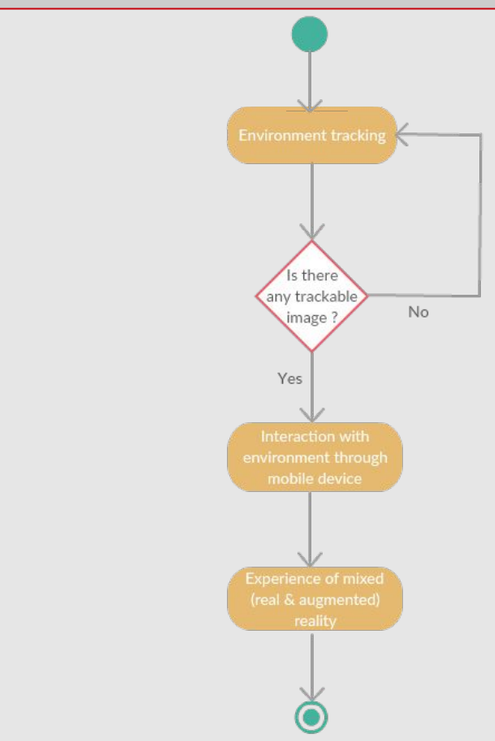

Figure 2 - Flowchart

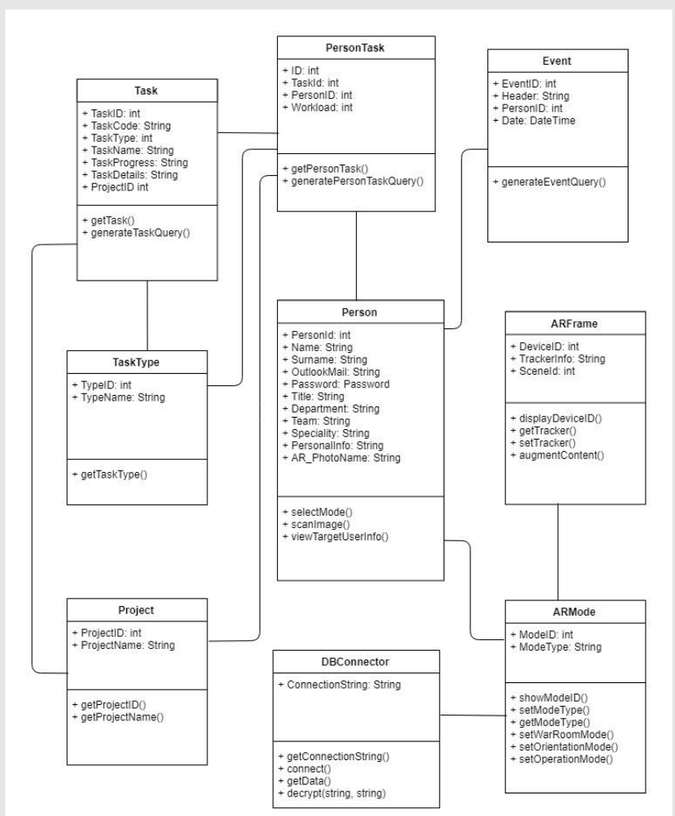

Figure 3 – Class Diagram

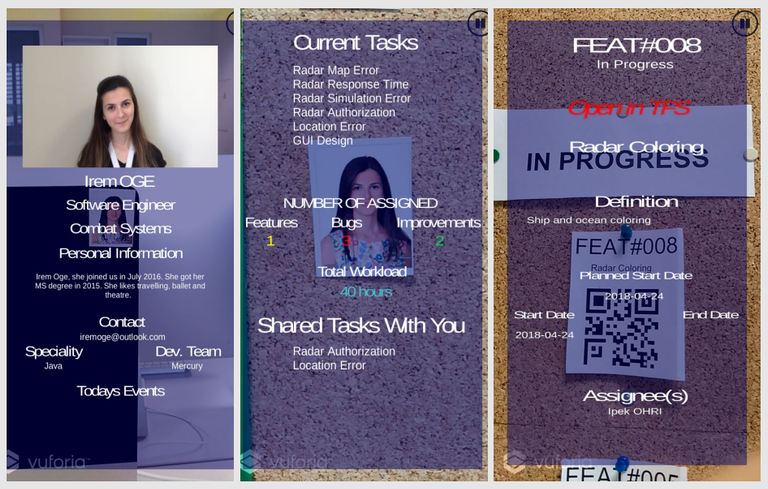

Figure 4 – Finished Product

Company Info

Havelsan Inc. was established in 1982, as a Turkish – U.S Company using the name Havelsan – Aydın. Company works for defence industry and most of their projects are military systems for both Turkish Armed Forces and some other foreign countries. In addition to military systems, they conduct civilian projects such as Cadastral Information System (TAKBIS) project. Company has four main departments and these are Information and Security Technologies; Cyber Security and Cloud Computing Technologies; Simulation, Training and Test Systems; and Command Control and Combat Systems.

Results & Conclusion

An initial objective of the study was to identify the potential benefits of AR in software development. This study provides a novel approach to augment software practitioners' reality. The results of this study support the view that a complementary tool is beneficial for assisting software development not only in daily task arrangement but also for onboarding novice software practitioners.

Overall, this study suggests a model to assist software practitioners while performing routine activities. In future investigations, it might be possible to improve the software development process by successfully capturing the tacit knowledge in a software development organization as it is actively evolved and to feed this information into improved/adapted AR models, so that AR can become an integral part of process management for software teams, using technology that is aligned with the interest of many software developers.

Publications

EuroAsia SPI² 2018 European System, Software & Service Process Improvement & Innovation — Workshop Study (Accepted)

UYMS 2018 — Workshop Study (Submitted)

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HAVELSAN

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