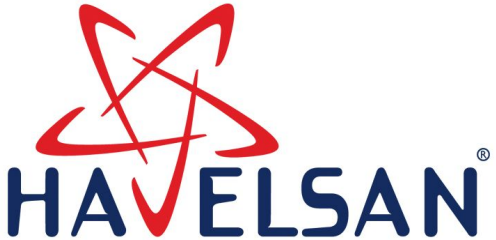

Augmented Reality Based Continuous Onboarding Framework

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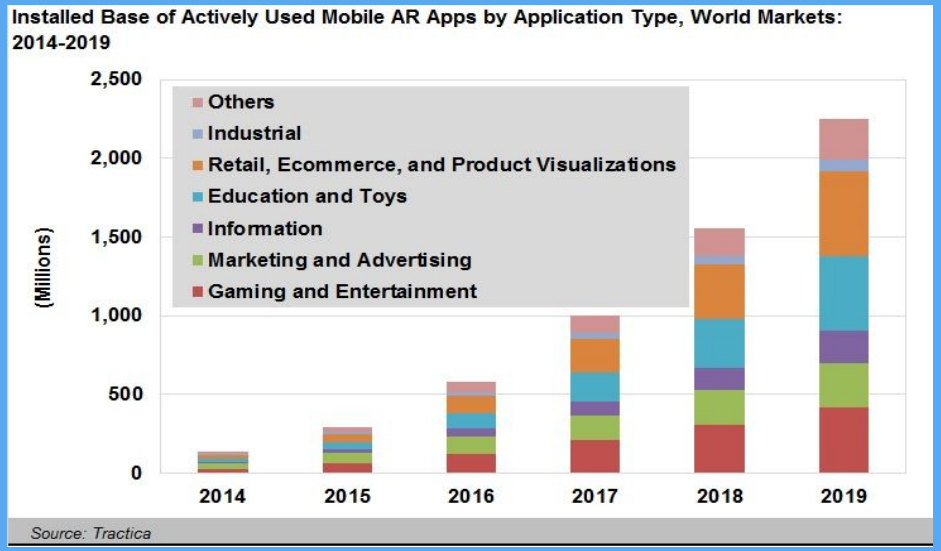
Co-Advisor: Dr. Eray TÜZÜN

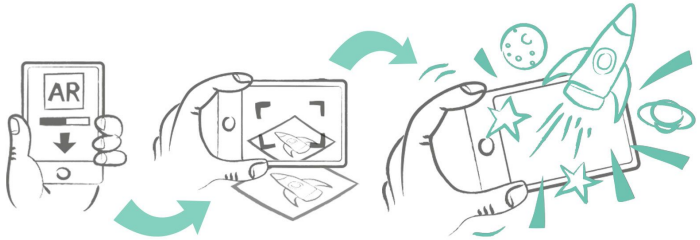
OUTLINE

What is Augmented Reality (AR) ?

AR is a technology, combines physical world with virtual objects for a new kind of visualization that promises spatial interaction in real time.

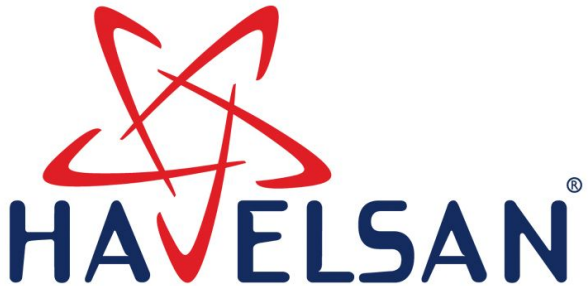


How Augmented Reality Works?



- Environment tracking
- Scan unique trackable image/object/text
- AR anchoring
- Placing AR components
- Mixed reality experience

Company Information



- Information and Security Technologies
- Cyber Security and Cloud Computing Technologies
- Simulation, Training and Test Systems
- Command Control and Combat Systems

Co- Advisor:
Dr. Eray Tüzün

He works as a principal software engineer at Havelsan.

He has knowledge and experience on

- Agile Project Management
- Software Development Processes
- Software Engineering

Problem

For continuous integration;

Developers should always be

- highly motivated.
- continuously focused on the project.
- keep the pace of the process.

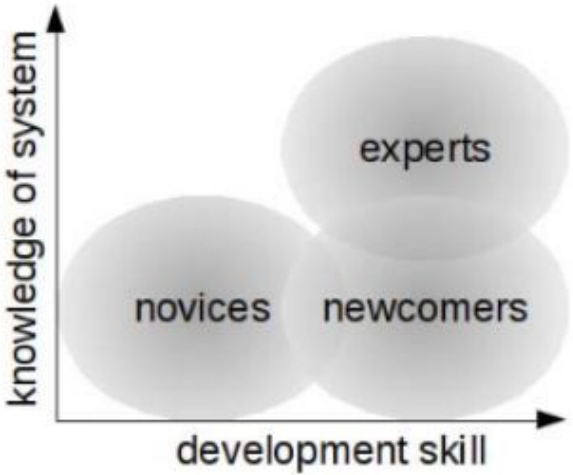
Problem

- Making onboarding process more efficient
- Reducing the manpower and time
- Providing high retention ratio

Onboarding

- The newcomer will need to learn
  - team’s tools
  - processes
  - culture
  - existing codebase.
- Successful onboarding provides retention.

Onboarding



- Making the newcomers to have a high knowledge about the system
- Increasing correlation between colleagues
- Providing knowledge transfer

AR + Onboarding

AR technology

- provides extended experiences.
- helps employees to adapt better to business and colleagues.
- enhances working conditions with augmentation.

Analysis

- Mixing software engineering disciplines with AR
- Using mobile devices for onboarding
- Lack of research about the combination of AR and onboarding processes

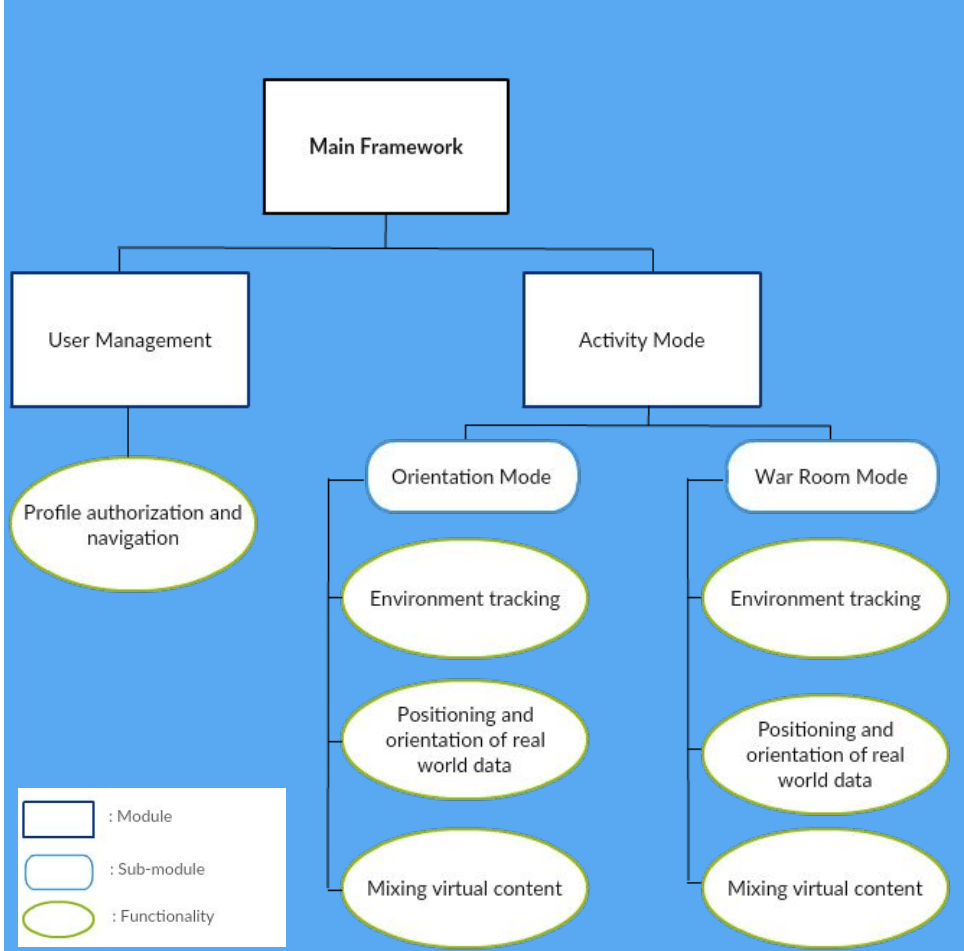
Objectives

- Creating navigators for software development workflow process.
- Providing continuous onboarding to software practitioners while performing their daily tasks.
- Retrieving data from multiple data sources.

EO: Experience Objectives **DO:** Deployment Objectives **RO:** Research Objectives	**EO1:** Run on a wide range of mobile devices.	**EO2:** Automatically identify the data sources within a repository of software project.	**EO3:** Reform the original appearance of the office by visualizing the required parts of a project.	**EO4:** Redesign the original office scene by augmenting the user's reality with design elements	**DO1:** Creation of the virtual dashboard requires simple procedures and most common hardware.	**DO2:** Framework does not require a large investment or an expensive training program.
RO1: Real-time data display using camera tracking on a mobile device.	✓		✓			✓
RO2: The first implementation of dynamic AR in software development context.	✓			✓		
RO3: A practical dynamic scene reconstruction					✓	
RO4: Efficient 3D performance representation for rendering, storage, and display.	✓			✓		✓
RO5: A practical 3D office construction from dynamic and static AR assets.	✓	✓	✓		✓	✓
RO6: A workflow for 3D modelling of software office					✓	

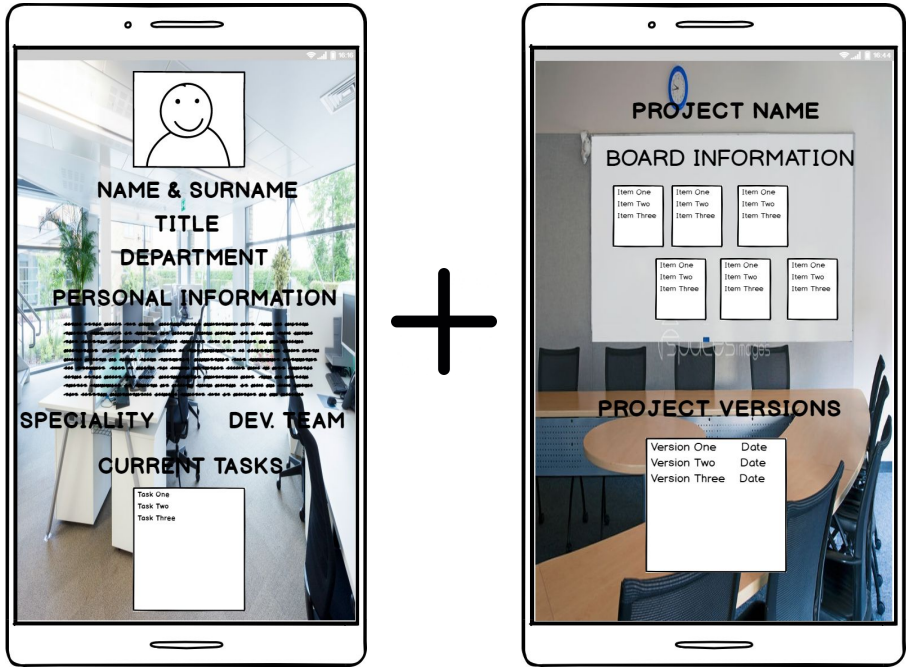
Solution

Providing an onboarding system for new-coming software practitioners for getting familiar with the colleagues, company culture and current projects.



Demo

Planned Works



- Designing “Orientation Mode”
- Designing “War Room Mode”
- GUI design for menu navigation
- Managing and importing data from related sources

Tubitak Application

TÜBİTAK

- 2209/B INDUSTRY ORIENTED GRADUATE THESIS SUPPORT

(2209/BÜNİVERSİTE ÖĞRENCİLERİ YURT İÇİ ARAŞTIRMA PROJELERİ DESTEK PROGRAMI)

(Submited on December 2017 waiting for approval)

Results

WITH THIS PROJECT,

- COMBINING two areas that are not combined before which are AR and Onboarding.
- BRINGING a new approach to software engineering disciplines.
- OPENING a new door into redesigning the original office scene by augmentation.

Acknowledgement

We are grateful:

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- Dr. Eray TÜZÜN
- Specialist Ulaş GÜLEÇ
- HAVELSAN
- Çankaya University GameLab

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Thank
you!!


Questions?