L-Università ta' Malta
Faculty of Information &
Communication Technology

Department of
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Systems

Workplace Assisting Augmented Reality (WAAR)

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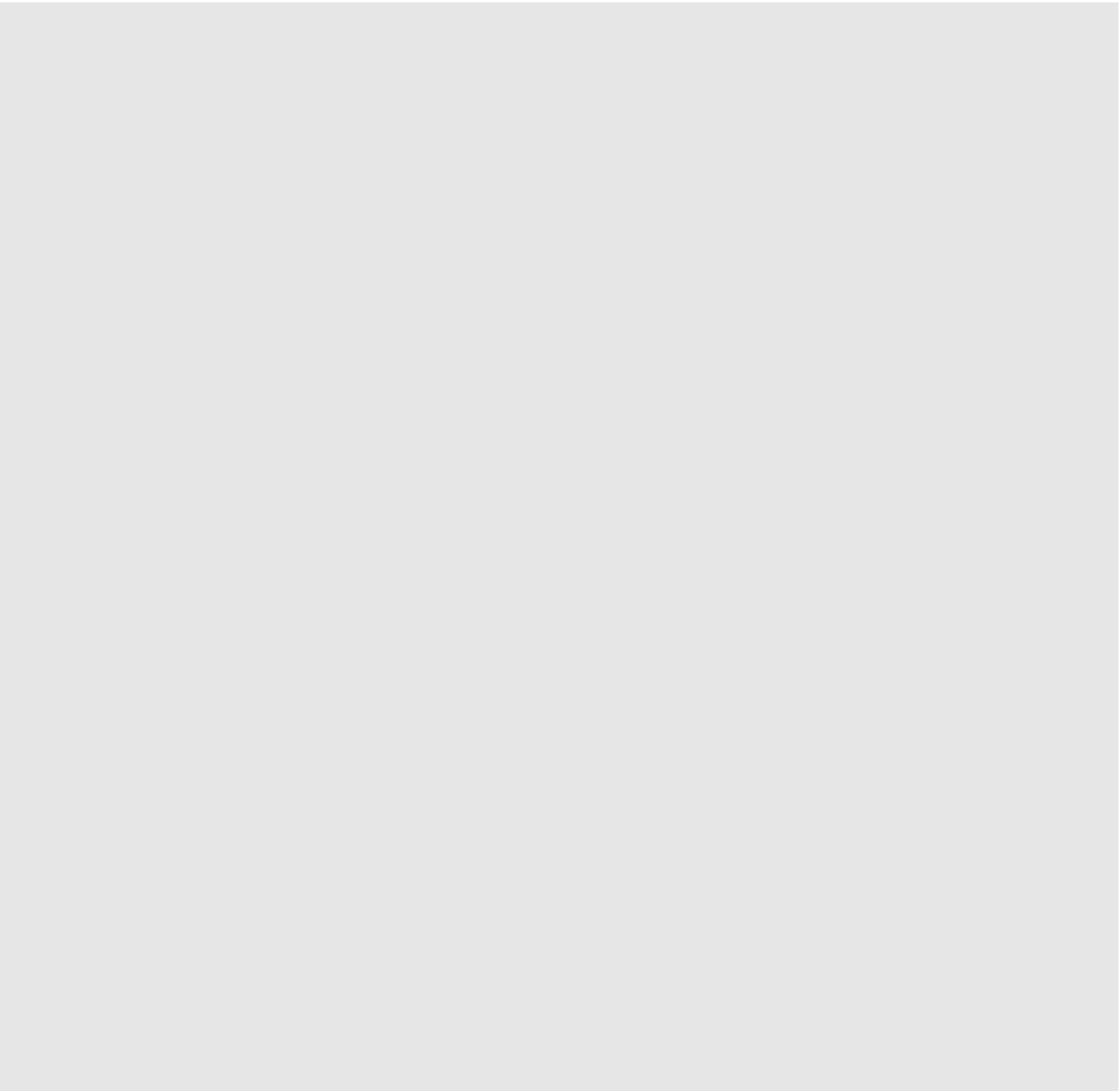Supervisor: Dr.Vanessa Camilleri,

INTRODUCTION

"Person-job fit is a substantial factor for decreasing job stress and the adjustment of employees to an organization is an important issue for eliminating stress"[12]. Providing an assistant augmented reality application for the workplace may provide several benefits as well as challenges. The application may help new employees as well as visitors quickly adjust to the new environment they find themselves in.

Feature extraction on real world objects can present several challenges especially if one might apply traditional computer vision techniques. Applying the correct computer vision models along with the right user profiling techniques is necessary. Thus, users are provided with a seamless and interactive experience to gradually understand the workplace in which they work in, hence eliminating the stress for them to adjust on their first days of work.
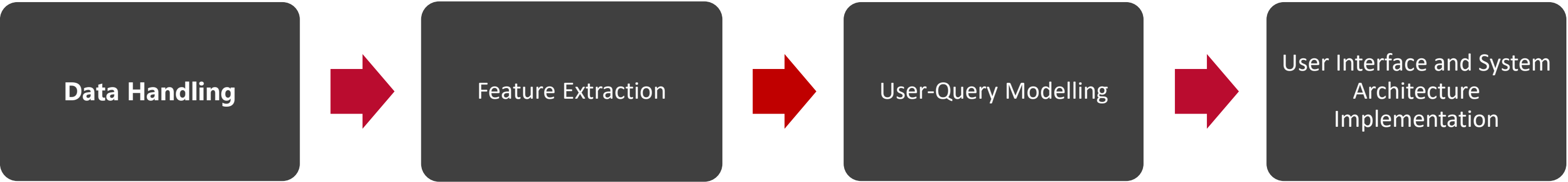
AIM

The aim of this project is to research and develop a workplace assistant augmented reality using image and object detection techniques provided by Vuforia along with user profiling to recommend relevant information to the user.

ARCHITECTURE DESIGN

METHODOLOGY

Data Handling → Feature Extraction → User-Query Modelling → User Interface and System Architecture Implementation

RESULTS

The SVD++ model achieved average Root Mean Square Error and Mean Absolute Error of 3.1226 and 2.6866 respectively, in comparison to other baselines. The AR application obtained on average a distance variance of 130 cm and 150 cm for image and model targets respectively, a 270 degrees of rotation variance for both targets, and an average occlusion variance of 0.55% and 0.64% for image and model targets respectively, where the application could efficiently work. The system obtained on average positive qualitative results via user-feedback along with recommendations on how it may be further improved.

CONCLUSIONS AND FUTURE WORK

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REFERENCES

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2. Research paper
3. Paragraph A
4. Section B