Department of Electrical and Computer Engineering

North South University

Senior Design Project

Markerless Location Based Augmented Reality Application For Showcasing Deals

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DECLARATION

This is to certify that this project is our original work. No part of this work has been submitted elsewhere partially or fully for the award of any degree or diploma. Any material reproduced in this project has been properly acknowledged.

Students' Names and Signatures:

1. **Mohammad Sadman Islam**

2. **Fyeeza Fyruz**

3. **Md. Nahiyan Naser**

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APPROVAL

We, **Mohammad Sadman Islam(1510151642), Fyeeza Fyruz(1510152042), Md. Nahiyan Naser(1510718042), Gazi Shafayet Hossain(1430364042)**, members of **CSE 499 (Senior Design)** from the **Department of Electrical and Computer Engineering (ECE)** at **North South University (NSU)**, have worked on the project titled **"DealTeal - Markerless Augmented Reality based application for showcasing deals"** under the supervision of **Dr. Mohammad Monirujjaman Khan** as partial fulfillment of the requirement for the degree of Bachelor of Science in Computer Science and Engineering (BSCSE) and has been accepted as satisfactory.

Supervisor's Signature

Dr. Mohammad Monirujjaman Khan

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Chairman's Signature

Dr. K. M. A. Salam

Professor & Chairman

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ACKNOWLEDGEMENT

By the grace and mercy of the Almighty, we have completed our senior design capstone project titled “DealTeal - GPS based Markerless Augmented Reality for showcasing deals”.

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Abstract

This article describes the design and implementation of an online mobile app that is capable of locating deals and displaying related information on a digital Augmented Reality window through a smartphone’s camera. This application is a two-tier client-server architecture. A deal must firstly be registered on our website by an entity, separate from regular users. DealTeal AR makes use of the camera view to overlay digital information of locations around you, according to the direction from your current location in the real world. When you tap on DealTeal AR, it shows a view through your smartphone's camera. Cards appear showing information or deals pulled from DealTeal's database about businesses - restaurants, hotel, points of interest and more. With advanced augmented reality technologies such as computer vision and object recognition, the deals are overlaid on the real world and becomes interactive. In order to improve the application’s efficiency, a virtual terrain modeling interface with deep learning to improve the building recognition ability was also used.