

**IMPLEMENTATION OF GAZE TRACKING BASED ON HEAD POSE
ESTIMATION TO DETERMINE CONSUMER POINT OF INTEREST USING
DEPTH-CAMERA**

By

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12111014

BACHELOR'S DEGREE
in

INFORMATION TECHNOLOGY

FACULTY OF ENGINEERING AND INFORMATION TECHNOLOGY



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The logo features the letters 'SGU' in a large, light blue, stylized font. The 'S' and 'U' are solid blue, while the 'G' is a lighter shade of blue with a white circular cutout in the center. To the right of the 'U' is a registered trademark symbol (®). Below this, the words 'SWISS GERMAN UNIVERSITY' are written in a smaller, dark blue, sans-serif font.

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August 2015

Revision after Thesis Defense on 11 August 2015

STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

IMPLEMENTATION OF GAZE TRACKING BASED ON HEAD POSE ESTIMATION TO DETERMINE CONSUMER POINT OF INTEREST USING DEPTH-CAMERA

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A gaze is an indicator what people focused on or interested in. The research purpose is to implement a gaze tracking application so that people know which part of a wide view target is the most interesting by people. This research uses *Kinect Xbox 360* as a tracking device and *Visual Studio 2013* as development environment (IDE). The research can be applied in an advertisement usability, to know which the point of interest is for consumer so retailers or advertisement designers can put their best on it. Using the source code of *Facetracking* from *Microsoft Kinect SDK* to get drawings of face models, then modifying them to determine gaze of the subjects and their ID. There are several scenarios to supervise experiment result with help of volunteers. The research results between 70% and 80% accuracy percentage in practical experiment scenarios (ideal condition), and 50-60% in real experiment scenario. From the results, graph and statistics can be generated so the user can know which the point of interest is based on view order, view frequency or view duration.

Keywords: Kinect SDK; Kinect Xbox 360; Eye gaze tracking; head pose estimation; point of interest; C# Visual Studio



DEDICATION

I dedicate this work to my parents, friends and everyone who always support me.



ACKNOWLEDGEMENTS

First of all, thank you very much and my gratitude to Jesus Christ who blesses me and makes me learn a lot from this thesis and allow me to finish this thesis as defined scope. I also thank to my parents who support me during this thesis working and study activities in Swiss German University.

I also thank to Mr. James Purnama as my Advisor and Mr. Maulahikmah Galinium as my Co-Advisor, for their advices, help and patience during thesis working. Without them, I could not finish this thesis.

Last but not least, I thank to all my friends who help and support me during thesis working and study in Swiss German University



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