

# Attention Tracker

A PROJECT REPORT

submitted by

**Department of Electronics & Communication**

**Reg No:Roll numbe**

to

the APJ Abdul Kalam Technological University

in partial fulfillment of the requirements for the award of the Degree

of

Master of Technology

in

*VLSI & EMBEDDED SYSTEMS*



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## DECLARATION

I undersigned hereby declare that the seminar report ““Attention Tracker ”” , submitted for the partial fulfillment of the requirements for the award of degree of Master of Technology of the APJ Abdul Kalam Technological University, Kerala is a bonafide work done by me under the supervision of Mr. Kadar A. A.. This submission represents my ideas in my own words and where ideas or words of others have been included, I have adequately and accurately cited and referenced the original sources. I also declare that I have adhered to ethics of academic honesty and integrity and have not misrepresented or fabricated any data or idea or fact or source in my submission. I understand that any violation of the above will be a cause for disciplinary action by the institute and/or the University and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been obtained. This report has not been previously formed the basis for the award of any degree, diploma or similar title of any other University.

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## CERTIFICATE

This is to certify that the report entitled, “**Attention Tracker** ” submitted by **Kurian C Kurian** to the APJ Abdul Kalam Technological University in the partial fulfillment of the requirements for the award of the Degree of Master of Technology in *VLSI & EMBEDDED SYSTEMS*, **Department of Electronics & Communication** is a bonafide record of the project work carried out by her under our guidance and supervision. This report in any form has not been submitted to any other University or Institute for any purpose.

Seminar Guide

## ACKNOWLEDGEMENT

My endeavour stands incomplete without dedicating my gratitude to everyone who has contributed lot towards the successful completion of my seminar report. I am in debited to my parents for blessing me with their grace and taking my endeavor to a successful culmination. I express my gratitude to **Mr. Kadar A. A.**, principal, ER & DCI Institute of Technology, Vellayambalam, Thiruvananthapuram for all the help rendered to me. I also thank all the faculties of my college for the help they have extended. I extend my sincere thanks to **Mr. Kadar A. A.**, seminar guide for providing me with the guidance and facilities for the seminar. I express my sincere gratitude to seminar coordinators **Miss. Divya D S**, for their cooperation and guidance for preparing and presenting this seminar report.

## ABSTRACT

This project is an implementation of opencv in real world. It uses, raspberrypi for easy replication and portability. The module, works by capturing images of objects, temporarily storing them on disk and processing them to see if image of a face exists in the stored image. After detection stored images is immediately deleted or over written to conserve space.

From opencv we use feature extraction a feature extraction method, which subtracts pixels of a group(identified by the algorithm) from the original image, to form a pattern object. This pattern object is then subjected to neural network to check if it fits the pattern of a face.

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## 0.1 Introduction

Attention Tracker is a module which can be installed independently on show cases, merchandise, posters to see which product is getting maximum attention from people. It is completely unobtrusive unlike survey forms and feedback requests and therefore can be more effective. It uses Face recognition software called opencv, an image processing algorithm, and neural network. This application is on top of raspbian os which controls the frequency of monitoring, raspbian os is an open source operating system for raspberry, based on linux kernel. It is a branch of debian OS. The module, works by capturing images of objects, temporarily storing them on disk and processing them to see if image of a face exists in the stored image. After detection stored images is immediately deleted or over written to conserve space.

From opencv we use feature extraction a feature extraction method, which subtracts pixels of a group(identified by the algorithm) from the original image, to form a pattern object. This pattern object is then subjected to neural network to check if it fits the pattern of a face. It is based on the work done by Witsarut Sriratana et al[?].

## 0.2 Litratrue Survey

In the paper [?] W.Sriratana et al. presents a face identification system. It works by capturing image in real time, converting that image to integral image, and running FAAR-function on it. The FAAR function searches for standard facial features like dark regions

around eyes, light regions at the nose. The output of Faar function is a set of FAAR features. This output is then input to a neural network, which identifies the face.

In the paper [?] Viola et al. shows it is faster to recognize facial features and identify a given image as a face by converting image to an integral image.