



UNIVERSITY of
GREENWICH



University

October University for
Modern Sciences and Arts
Established by Dr. Nawal El Degwi in 1996



Faculty of
Computer Science

Graduation Projects Book
2016/2017



GRADUATION PROJECTS BOOK



2016/2017



FACULTY OF Computer Science

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2016/2017

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DEAN'S WORD

I'm so impressed by the ideas behind the graduation projects of this year 2016. The results - achieved during a long year of work, reflects the skills and innovation capability of our senior students. I believe that someday the majority of our new graduates could become great nouns in the Information Technology era worldwide.

I cross my fingers to all of you - our CS graduates; wishing you all a very brilliant future

I want to address a word to our CS candidates; you are one leg apart from starting your dream future. Let nothing distract you from deeply joining our Computer Science family. In the Faculty of Computer Science, instructors and students enjoy the friendly, productive, and cooperative atmosphere of work with a family spirit.

In the faculty of Computer Science, we prepare our students to cope with the current hot topics in computer science and market needs such as:

Artificial intelligence and robotics - broadly, figuring out how to formalize human capabilities.

Big Data and Cloud Computing - for collecting and storing massive collections of data and making them easily available

Human-computer interaction covers human-computer interface design and techniques that allow computers to understand people

Security of computer systems - including network-level security, OS-level security, and digital forensics.

Data mining - for finding relatively simple patterns in massive amounts of loosely structured data

Machine learning - building mathematical models that represent statistical trends in data, with good predictive properties

We are there to help you build your dream career in IT, no matter how much effort it requires.



Prof. Dr. Ali
El-Bastawissy

*Dean, Faculty
of Computer
Science*



01 Spring 2017



Spring 2017



Abdelkahar Mostafa
Salem Mohamed

Project Name: Shopping
Mobile Application



Ahmed Abdelmageed
Samir Ragab

Project Name: Specific
Point of Sale (Water Pump
Database management
System)



Ahmed Alaa El-Dien
Mohammed Zaki Ismail

Project Name: Client-
Server Based Application
for Android to Personal
Computer Controller



Ahmed Diaa Mohamed
Mohamed Abdelmaksoud

Project Name:
Automated Surveillance
System and Facial
Composite Sketching



Ahmed Ehab Mohamed
Mady

Project Name:
Emergency Mobile
Application



Ahmed Said Mohamed
Kotb Elkholy

Project Name: Super
Vulnerability Scanner



Ahmed Tarek Mohamed
Mahgoub

Project Name: Car
Monitoring System
(Sensor Car)



Al Hussien Mohammed
Hassan Mohammed Afify

Project Name: 3D
Human Imitation and
Behavior Validation



Aly Sameh Aly
Mostafa

Project Name: Simulation
of outer space



Youssef Mohamed
Mohamed Mahmoud

Project Name: Real
Estate Web
Application



Walid Awny Amer
Morsy Bayomy

Project Name: Manipulating
Virtual Objects by Hand
Gestures



Amr Khaled Esmail
Hassan El Hodaiby

Project Name: Automated
recognitions of money bill
for the visually impaired



Eslam Mohamed
Mohamed Mohamed
Farag

Project Name: Voice
Recognition Wheelchair
with Obstacle Avoidance



Ibrahim Farouk
Fouad Mohamed Aly

Project Name: Automated
Surveillance System and
Facial Composite
Sketching



Kamal Khaled
Abdelrehim Mohamed
Ahmed

Project Name: Multi-
Touch Interaction on
a Spherical Display



Karim Kamel Mohamed
Afifi

Project Name: 3D
Protein Docking



Sandy Mhd Nehad
Nader

Project Name: Interactive
3D Educational Volcano
Simulation



Maged Mostafa
Mohamed Anwar
Abdelhamid

Project Name: Data
Oriented Analysis on
Atomic Collisions



Mahmoud Mostafa
Abdelfattah Mohamed

Project Name: Mixed
Realty



Mahmoud Zidane Sayed
Abdelmaksoud

Project Name: 3D
Museum Enviroment



Marina Samir Awad
Gendy

Project Name: Deaf
and Dumb aided system



Moataz Mostafa
Ibrahim Mohamed
Mostafa

Project Name: Virtual
Viewing, Gaming &
Target detecting Robo-Tank



Mohamed Ashraf
Mohamed Mahmoud
Elmasry

Project Name :
Scientific Exploration
through a simulation of
the universe



Mohamed Elsayed
Abdelhafez Gaballah

Project Name:
Computational Analysis
of Bioelectricity



Mohamed Ezzaldin
Mahmoud Youssef

Project Name: 3D Printed My
electric Prosthetic Arm



Mohamed Hassan
Farouk Ahmed El
Shazly

Project Name: 3D game
using OpenGL



Roshdy Sayed
Roshdy Sayed

Project Name: Pharmacy
Online Store



Mohamed Mustafa
Roushdy Shehata

Project Name: Kinect
Disabled Aid System



Nader Mahmoud
Mohamed Khalifa
Younes

Project Name: 3D
Virtual Clothing
Room



Nour El Din Ashraf
Esmat Abdalla Essa

Project Name: Molecular
Dynamic Framework



Omar Osama Abd El
Maguid El Shal

Project Name:
Tour Guide Robot



Ramy Amanuel Samuel
George Saleeb

Project Name:
Indoor Navigation
using 3D modeling



02 Fall 2016





Abdelrahman Galal
Mohamed Elmagharbel

Project Name: Fleet
Tracking System for
Vehicles and Ticket
Avoidance (iTrack)



Dina Reda Abdelhamid
Elroudiny

Project Name: Sign
Recognition and Color
detection Robot



Ahmed Mohamed Eid
Mohamed

Project Name: Blood
Banking Application



Mohamed Adel Galal
Abdellatif

Project Name: Multi
DBMS's Data
integrator and
reporter



Christine Ramy
Ezzat Nassif

Project Name: Egypt
Travel Guide Mobile
Application



Youssef Samir Aziz
Morkos Boctor

Project Name: Android
Application; Fishing
Spots



Ramy Amr Ahmed
Hanaey

Project Name: Object
Tracking Using Kalman
Filter



03.

Projects Discussion

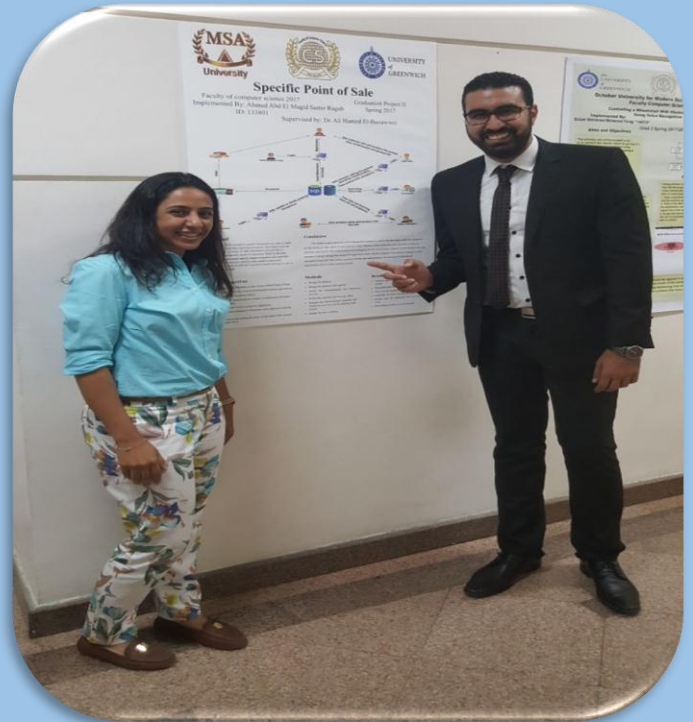
Projects Discussion



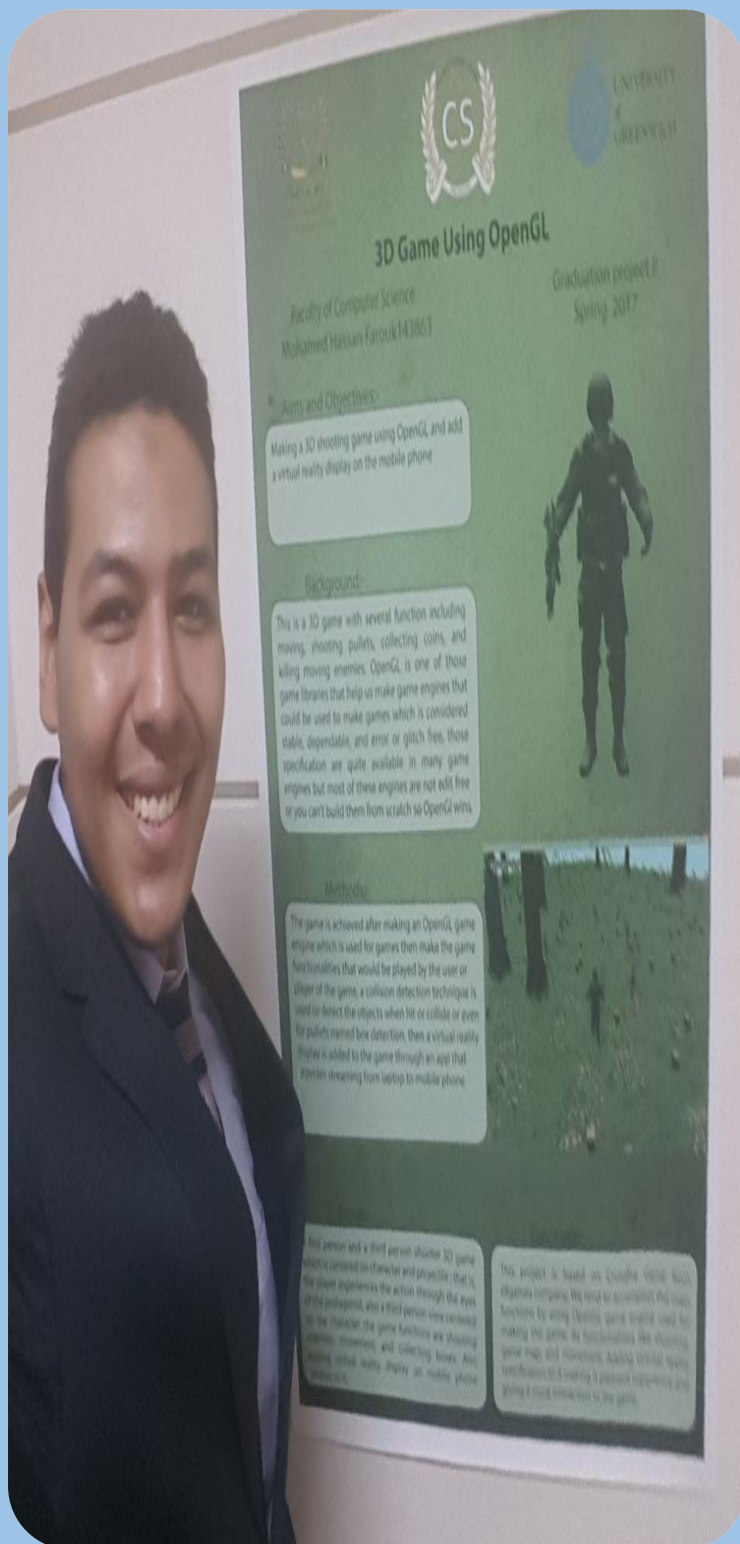
Projects Discussion



Projects Discussion



Projects Discussion



Projects Discussion



Projects Discussion

MSA University October University for Modern Sciences and Arts

UNIVERSITY of GREENWICH

Supervised By: Dr. Ahmed Farouk
Implemented By: Mohamed Mustafa Roushdy
ID: 136329
Grad 2, Spring 2017

Kinect disabled aid system

background

The system is a Kinect based disabled aid system, it helps users suffering from spinal cord injuries to control some functions in their PC or laptop using simple head gestures without the help of anyone.

objective

Our main objective is to make Kinect based disabled aid system in order to facilitate the interaction between the injured person and the laptop or PC.

Make the system do all the task possible to do on PC or laptop, only using gestures coming from the person using the system.

The system consists of taking gestures from the user over the Kinect that allows the user to:

- control the mouse (with all its functions).
- control the volume of the PC or laptop.

Approach

The system would be built upon windows application system, using Kinect skeleton tracking that can easily get the joints of the whole body and track each joint, using slope algorithms and windows DLL to control the PC or laptop.

Results

Controlling the PC or laptop only using head gestures, that allows the user to control the mouse and volume.

MSA University October University for Modern Sciences and Arts

UNIVERSITY of GREENWICH

October University for Modern Sciences and Arts
Faculty Of Computer Science
Spring 2017

Graduation Project 2

Prepared by:
Ahmed Tarek Mohamed Helwan
ID: 135629

Supervised by:
Dr. Tarek Abdelhamed Makhlouf

SensuCar (Car Monitoring System)

Class Room

Smart-Phone

1-Background:

The system is designed to monitor the location and status of a car. It uses a laptop to receive data from the car via Bluetooth and a smartphone to receive data from the car via a mobile app. The system is designed to be user-friendly and easy to use.

2-Method:

The system is designed to be user-friendly and easy to use. It uses a laptop to receive data from the car via Bluetooth and a smartphone to receive data from the car via a mobile app.

3-Results:

The system is designed to be user-friendly and easy to use. It uses a laptop to receive data from the car via Bluetooth and a smartphone to receive data from the car via a mobile app.

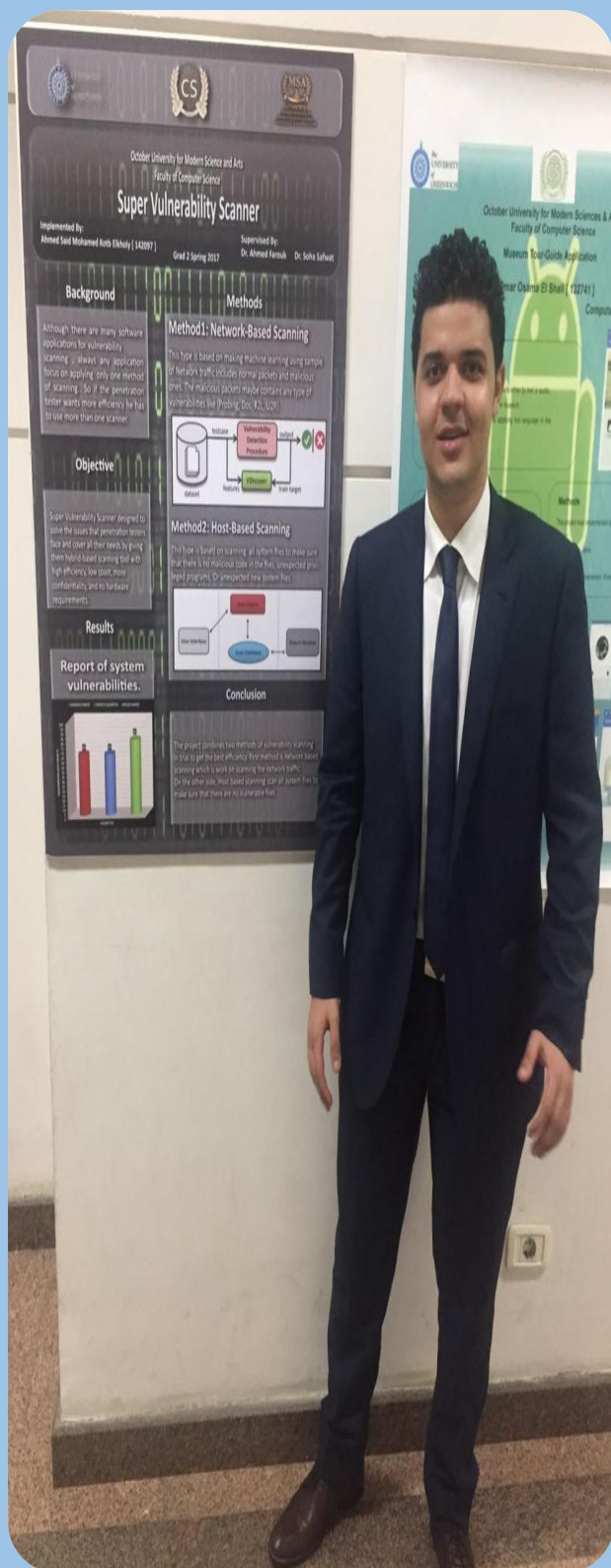
4-Conclusion:

The system is designed to be user-friendly and easy to use. It uses a laptop to receive data from the car via Bluetooth and a smartphone to receive data from the car via a mobile app.

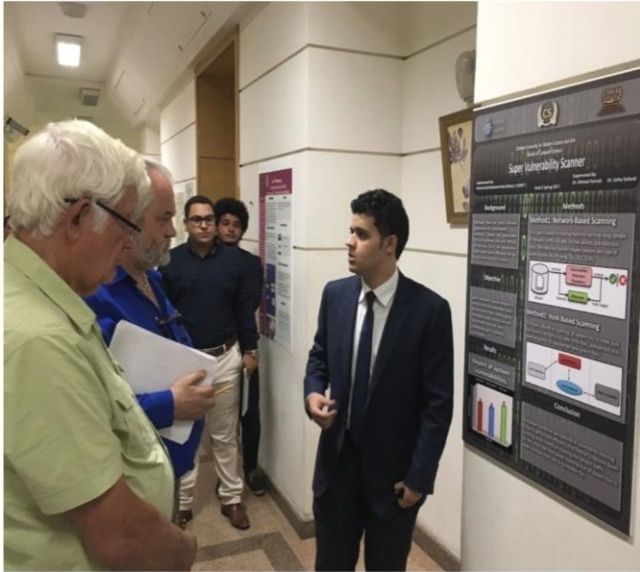
Projects Discussion



Projects Discussion



Projects Discussion



Projects Discussion



Projects Discussion



Projects Discussion





04. Top Projects

TOP PROJECTS

1

Ahmed Said Mohamed Kotb Elkholy

Spring 2017

Supervisor:

Dr. Ahmed Farouk

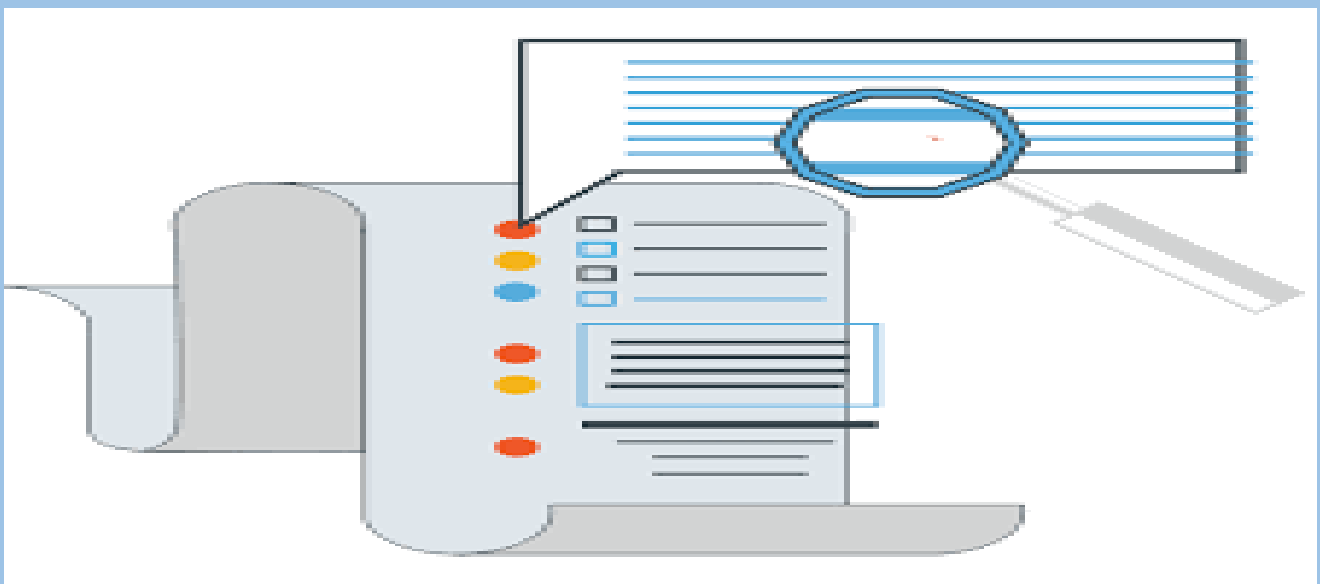
Dr. Soha Safwat



Title : Super Vulnerability Scanner

Abstract

The project combines two methods of vulnerability scanning in trial to get the best efficiency. The first method is network based scanning which is work on scanning the network traffic. On the other side, Host based scanning that makes periodic scanning on all system files to make sure that there are no unexpected privileged programs, malicious code in the files, or unexpected new system files.



TOP PROJECTS

2

Maged Mostafa Mohamed

Spring 2017

Supervisor:

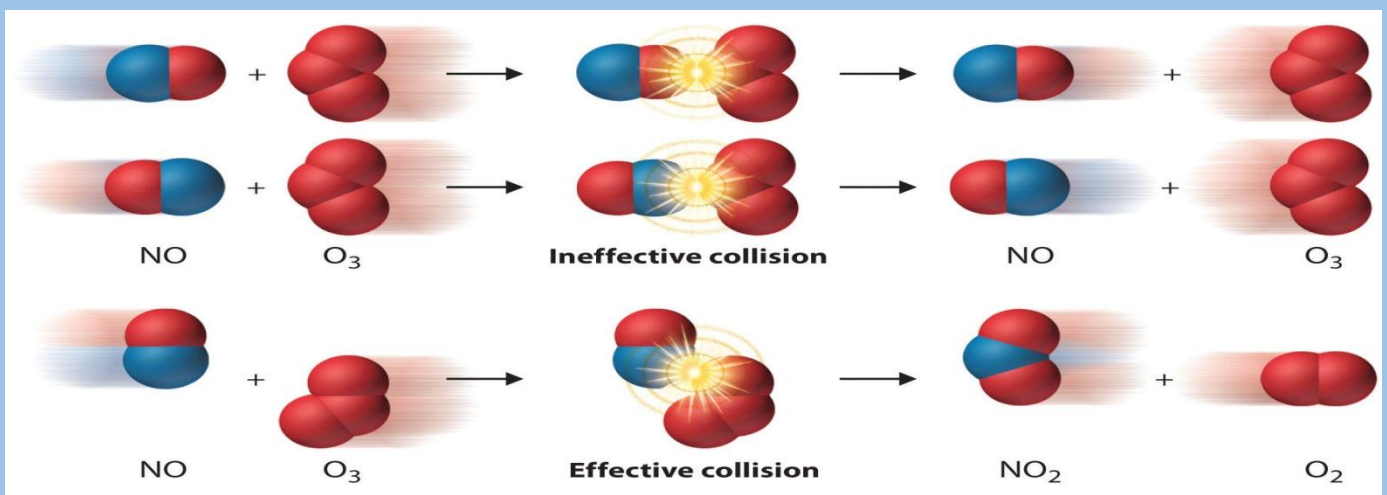
Dr. Magda El- Daghestany



Title : Data Oriented Analysis on Atomic Collisions

Abstract

Particle collision is a growing field that aims to discover the science of the future. Very few particle colliders are built, but the most powerful one is the large Hadrons Collider (LHC). This project is a data oriented analysis on the experiments made in the LHC which implies two main tasks. Firstly, understand the science behind the particle collisions, and secondly, analyze the data resulting from collisions. The main objectives of this data oriented analysis is to justify the Higgs theory, and understand what this science may lead to in the future. Agile methodology is used to manage the whole project. The data that I will work on is released by CERN (European Organization for Nuclear Research).



TOP PROJECTS

3

Aly Sameh Aly Mostafa

Spring 2017

Supervisor:

Dr. Ahmed Farouk



Title : Simulation of outer space

Abstract

Astronomy is a science for studying celestial objects and phenomena, in its applications it uses nearly some branches of physics, chemistry and mathematics. This project is an android application that simulates the solar system and some of events that may happen in the outer space. This simulation will be done as a desktop application. The branches of astrophysics that are going to be applied are Relativistic astrophysics and solar physics. In the future we can broaden our application to involve more events which will include other branches of astrophysics like Galactic astronomy and High energy astrophysics.



TOP PROJECTS

4

Karim Kamel Mohamed Afifi

Spring 2017

Supervisor:

Dr. Ahmed Farouk



Title : 3D Protein Docking

Abstract

We introduce a cross platform program that calculates the binding affinity of complexes (proteins and ligands) and allows the viewing of molecules in 3D space. The process begins by obtaining complexes (proteins and ligands) from the protein data bank that was uploaded by biologists from all over the world. The binding affinity of complexes can be then calculated by scoring functions in the most accurate way possible while maintaining the speed of the scoring functions in order to be used in protein docking and virtual screening. The scoring functions performance is enhanced by machine learning. This program also provides a molecular viewer to view molecules and manipulate them. This program will benefit researchers and labs in the process of drug design.

TOP PROJECTS

5

Ahmed Diaa Mohamed

Spring 2017

Supervisor:

Dr. Ahmed Farouk



Title : Automated Surveillance System and Facial Composite Sketching

Abstract

Recent years, technology has been improved very much in the area of computer vision, due to the increase in the rate of development digital cameras. This has made it easier to develop projects that helps with security. Also, the rate of crimes has been increased in the crowded areas. To help solve this problem, this project is an automated surveillance system that detects and tracks humans in crowded scenes while analyzing their behavior as normal or abnormal behavior through their motion. This aims to increase the level of security in public places by preventing the criminal activities before happening. So, the rate of crimes in crowded areas will decrease.

TOP PROJECTS

6

Walid Awny Amer Morsy Bayomy

Spring 2017

Supervisor:

Dr. Ahmed Farouk



Title : Manipulating Virtual Objects by Hand Gestures

Abstract

Our world is now filled with mixed and augmented reality based applications in many forms such as games and utilities, but there are some functional and non-functional restrictions. Firstly, using a camera or in many cases more than one camera; to track the user hand to control virtual objects, and this will overhead the CPU especially if it is a mobile device. Secondly, if the user has an amputated hand or forearm, the camera(s) will not be able to detect the movements, as a result the application will not be useable. The proposed solution is using the Myo armband device to be worn at the arm, which is used to detect the electric signal and send it to the receiver, which will overcome those restrictions.

TOP PROJECTS

7

Mahmoud Mostafa Abdelfattah Mohamed

Spring 2017

Supervisor:

Dr. Ahmed Farouk



*Title : **Mixed Realty***

Abstract

Mixed reality, flexibility or hybrid realty are different names for the same thing which aims to combine the best aspects of both virtual reality and augmented reality where the both real and virtual environment are present can be interact with them at the same time as it blends the physical and the digital world together which break the smart phones and laptops smart boxes. Microsoft HoloLens, the Meta 1 and 2 Headsets, ODG headsets, Google Glass and more are altogether "Augmented reality" headsets, however some of them are likewise "mixed reality" headsets.

My developed platform aims to make a Mixed Reality Glass (MRG), which is a compact PC associated with a headset screen utilizing Head Up Display (HUD) innovation, that gives you a chance to see, listen, and collaborate with multi-dimensional images inside the encompassing range, for example, an office space. Clustering is added to our platform in order to facilitate any future developments for any uses. Stereo vision is one of concepts used in which the two eyes sees different scenes but have plenty in common, however each eye gets visual data the other doesn't. Three Dimensions (3D) is consisting of the visualizations coming from both eyes. Each eye catches its own view and the two separate pictures are sent to the mind for preparing. Then it removes the intersected parts in order to create the third Dimension.

TOP PROJECTS

8

Ahmed Ehab Mohamed Magdy

Spring 2017

Supervisor:

Dr. Ahmed Farouk



Title : Emergency Mobile Application

Abstract

Millions of people all over the world suffer from chronic health problems. Today, we nearly have an emergency case every single minute. Hundreds of people suffer from this situation every day. And time is a critical factor. The unnecessary long steps to successfully call ambulance from any hospital will be met with harder chances for patients to be saved. Even if the call succeeds it may take several minutes, unfortunately these several minutes can be too long. During trying too hard to call for emergency, they will not have the chance to be prepared with the enough information to provide suitable aid specifically for patient's case. For every second patient left without medical intervention or even recognizing the issue decreases his chance of survival by 10%. Therefore, the aim of the proposed project is to build an effective and efficient tool (Medical Emergency System) to help people not only save their time but their lives too. And taking the definition of limited Smartphone capability to a whole new level. The application will provide patients easier access to the available hospitals located in their zone and alert nearby cardiopulmonary resuscitation (CPR) specialists who are out of duty. And will be able to provide life-saving care until emergency responders arrive.

TOP PROJECTS

9

Kamal Khaled Abdelrehim Mohamed
Ahmed

Spring 2017

Supervisor:

Dr. Ahmed Farouk



Title : Multi-Touch Interaction on a Spherical Display

Abstract

The proposed system is multi user, multi-touch sensitive spherical display in which an infrared camera is used for sensing touch actions done by any user on the sphere and it shares the same optical path with the projector used for the display. The system also permits the enclosure of both the projection and the sensing technique in the base of the same device, and easy 360 degrees of access for multiple users, with a high level of interactivity and real time performance with no delays. In addition, this project presents a set of multi-touch interaction techniques and interface concepts that easily allows any interactions around the spherical surface.

TOP PROJECTS

10

Al Hussien Mohammed Hassan
Mohammed Afify

Spring 2017

Supervisor:

Dr. Ahmed Farouk



Title : 3D Human Imitation and Behavior Validation

Abstract

The technology is beginning to thrive in the health sector and is becoming a part of physical therapy options. Microsoft provides device called Kinect which can offer innovative and exciting ways to rehabilitate, making treatment more enjoyable and increasing motivation. Using video games in rehabilitation settings has the potential to provide patients with fun and motivating exercise tools. We have been benefit from the technology of the Microsoft Kinect 3D depth-sensing camera and used it to aid in physical therapy.

Since effective rehabilitation is dependent on patients continuing their exercise program and one of the main reasons the patients don't go to visit a Physiotherapist because they always think about how far the hospital or the doctor's clinic is and how much effort that will cost them to do it. My developed application uses the Kinect sensor that can capture the patient's movements and transfers them to the avatar. The Kinect sensor precisely tracks the position of the patient's joints and compares his or her range of movement against prescribed movement in the application. At the end, the patient receives a score that allows him or her to see his or her progress accurately.

TOP PROJECTS

11

Moataz Mostafa Ibrahim

Spring 2017

Supervisor:

Dr. Magda El- Daghestany



*Title : Virtual Viewing,
Gaming & Target detecting
Robo-Tank*

Abstract

There are two industries that making great progress in their evolution and development. Robotics and gaming are different fields that rapidly grow through the whole world, many techniques, algorithms and scientific theories developed to present greatly useful services with highly maximum performance. In this project robotics and gaming are meeting to produce a new kind of gaming that depend on physical robot with entertainment that exceed games that based on graphics because every object is physically exist in the real world.

TOP PROJECTS

12

Youssef Samir Aziz

Fall 2016

Supervisor:

Dr. Ahmed Farouk



Title : Android Application: Fishing Spots

Abstract

Mobile development has become a crucial skill for all programmers alike, and applications have advanced tremendously and are capable of performing many smart functionalities. Fishing enthusiasts are constantly looking for methods that make their trips more pleasant, easier and more successful. This project aims to create a social platform for anglers and fishing enthusiasts alike where they can locate the different fishing nearby spots and in a glance get an overview of the necessary information such as weather, compass, nearest safety center.



TOP PROJECTS

13

Ramy Amro Ahmed

Fall 2016

Supervisor:

Dr. Ahmed Farouk

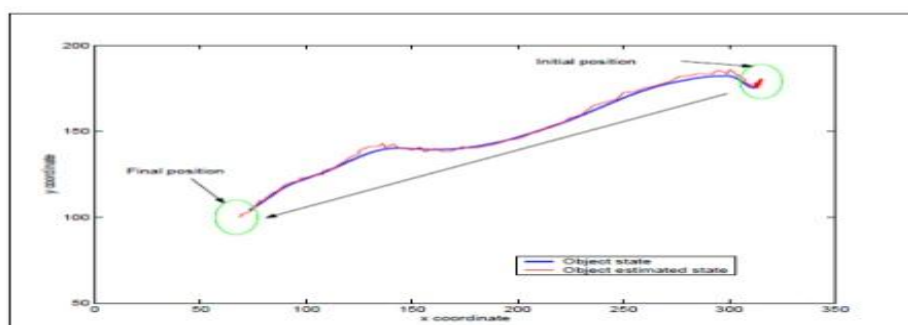


Title : Super Vulnerability Scanner

Abstract

The main purpose of this project is to be successfully able to detect moving objects and track them. The project is flexible to run over computers and mobile devices, and can be easily tutored to track several objects. The background subtraction technique is used to detect moving objects and afterwards image processing techniques are performed to remove noise followed by blob detection to organize and correctly label objects, the kalman algorithm is used in parallel with the Hungarian algorithm to track objects and predict their pathway in order to have a view of where the objects are even if they run behind any obstacles.

Object Tracking using Kalman Filter



<http://msa.edu.eg/msauniversity/computer-science-graduation-projects/2016-2017>



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