Nafiz Arıca

1. Mobile App. for Drowsy/Fatique Driver Warning System (Mobil Uykulu/Dikkatsiz Sürücü Uyarı Uygulaması) (**IOS**) (2 Students)

You are supposed to develop a mobile application, **(using the available libraries),** which detects the drowsy/fatique drivers while he/she is driving. The system gets the video input from the phone camera and it has to work real time.

2. Mobile App. for Drowsy/Fatique Driver Warning System (Mobil Uykulu/Dikkatsiz Sürücü Uyarı Uygulaması **(Android)** (2 Students)

You are supposed to develop a mobile application, **(using the available libraries),** which detects the drowsy/fatique drivers while he/she is driving. The system gets the video input from the phone camera and it has to work real time.

3. Mobile App. for Image based Web Search for Person Identification (Mobil Yüz Tabanlı Kimlik Arama Uygulaması) **(IOS)** (2 Students)

You are supposed to develop a mobile application, **(using the available libraries),** which detects the faces in an input image aquired from the phone camera and applies an image based web search on google. The search results are then organized to present the info about the person of interest in a more meaningful style.)

4. Mobile App. for Image based Web Search for Person Identification (Mobil Yüz Tabanlı Kimlik Arama Uygulaması) **(Android)** (2 Students)

You are supposed to develop a mobile application, **(using the available libraries),** which detects the faces in an input image aquired from the phone camera and applies an image based web search on google. The search results are then organized to present the info about the person of interest in a more meaningful style.)

5. Face Recognition System (Yüz Tanıma Sistemi) (3 Students)

Your are supposed to develop a face recognition system **(using the available libraries),** working on at least 100 people. The prototype will then be tested in one of the entrances in our university.

6. Facial Expression Recognition System (Yüz İfade Tanıma Sistemi) (3 Students)
Your are supposed to develop a system **(using the available libraries)** which detects the faces in a video and classifies the facial emotions (happy/angry/sad/neutral) based on the facial landmarks.

7. Ship Classification System (Gemi Sınıflandırma Sistemi) (2 Students)

You are supposed to develop a system **(using the available libraries)** which classifies the marine vehicles based on their pictures. It will then be used for strait pass and port entrances.

8. Robot Path planning for moving target (Hareketli Hedef için Robot Güzergah Planlama (2 Students)

Your are supposed to develop a system **(using the available libraries)** which determines the path to reach the moving target in a virtual environment.

9. Robot Path planning for multiple moving target (Çoklu Hareketli Hedef için Robot Güzergah Planlama (2 Students)

Your are supposed to develop a system **(using the available libraries)** which determines the path to reach the multiple moving targets in a virtual environment.

10. Object Classification Using Deep Learning (Derin Öğrenme Tabanlı Nesne Sınıflandırma (2 Students)

Your are supposed to develop a system **(using the available libraries)** which classifies the object images using multi-layer neural networks.

Cemal Okan Şakar

1. Movie Recommendation Website (2 Students)

Develop a web-site which recommends movies to the users according to their favorite movies. The engine should compute similarities between movies based on their genre, summary information, actors, etc.

2) Student Portfolio Management Web-tool (2 students)

In this project, you are supposed to develop a portfolio management web-site that enables the students upload their CV, personal information, hobbies, the classes they have attended before, certificates in different formats, international experiences, etc. The tool is expected to include additional functionalities to manage portfolios.

3) Stock Exchange Prediction Using Machine Learning Methods (2 students)

In this project, you are supposed to develop a web application that retrieves online financial data from web and makes predictions based on historical data. You may use machine learning libraries to implement the machine learning algorithms.

4) Predicting Financial Market Direction from Twitter Data (3 students)

In this project, using twitter API you are supposed to collect twitter data containing some keywords which are related with financial market in Turkey. The application will perform basic sentiment analysis on the data and classify the tweets as positive, negative and neutral. The aim of the analysis at the end is to measure the correlation between the results of sentiment analysis and next day's financial market direction.

5) Rent-a-Car Mobile Application **(Android)** (2 students)

The application will enable the users to see the available cars and their prices in a particular area according to the GPS data of the user. The companies will register to the system and upload their available cars with their photos and detailed information. The user will be able to reserve a car for a specific amount of time using the application.

6) Rent-a-Car Mobile Application **(IOS)** (2 students)

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7) Mobile Vision Project **(Android)** (2 students)

Develop mobile vision algorithms which can recognize different species of plants. The students should have a strong motivation to learn image recognition and processing algorithms.

Selçuk Baktır

1) Android Application for Chef's Recipe Selection: (2 students)

In this project, students will develop an Android application which will provide the user with a collection of meal recipes that can be cooked with the available food ingredients in the kitchen. The program will keep a database of meal recipes and another database of all the food ingredients available in the kitchen. The user will be able to add new food ingredients or remove them. After a meal recipe is selected the required ingredients will be automatically removed from the database of available ingredients. The user will be able to add new meal recipes to the database. She will also be able to select a recipe from the database and check if the necessary ingredients are available to cook that meal. If not, the user will be notified with a list of the required but missing ingredients.

2) IPhone Application for Chef's Recipe Selection: (2 students)

In this project, students will develop an IPhone application which will provide the user with a collection of meal recipes that can be cooked with the available food ingredients in the kitchen. The program will keep a database of meal recipes and another database of all the food ingredients available in the kitchen. The user will be able to add new food ingredients or remove them. After a meal recipe is selected the required ingredients will be automatically removed from the database of available ingredients. The user will be able to add new meal recipes to the database. She will also be able to select a recipe from the database and check if the necessary ingredients are available to cook that meal. If not, the user will be notified with a list of the required but missing ingredients.

3) Android Application for Campus Events Posting: (2 students)

In this project, students will develop an Android application which will allow the user to register and log in to the system. Any person who is registered to the system will be able to see the list of current events in the campus and also post new events. From the events list, users will be able select an event and add them to their calendar.

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5) Android Application for Matching Blood Donors with People in Urgent Need for Blood: (2 students)

In this project, students will develop an Android application which will allow users to register to the system with their blood type and email address. Any person who is registered to the system will be able to log in and see the list of all potential blood donors for a given blood type. Users

will also be able to send an automatic emergency blood request message to all potential donors with a given blood type.

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In this project, students will develop an IPhone application which will allow users to register to the system with their blood type and email address. Any person who is registered to the system will be able to log in and see the list of all potential blood donors for a given blood type. Users will also be able to send an automatic emergency blood request message to all potential donors with a given blood type.

7) Software Implementation of the RSA Encryption Algorithm: (2 students)

In this project students will implement the RSA encryption algorithm in software.

8) Software Implementation of the ECC Encryption Algorithm: (2 students)

In this project students will implement the ECC encryption algorithm in software.

Tevfik Aytekin

1. Sentiment Analysis (2 students)
Sentiment analysis is the process of analysing natural language text for discovering the opinions or emotions (e.g., positive, negative, or neutral) of the users on specific topics or products. In this project the aim to collect tweets from the Twitter stream (some other datasets will also be used) and do basic sentiment analysis.

2. Mobile Work Force (3 students)
Anyone with a mobile phone can work as an employee for a company to do some simple tasks. For example a company might want to check the locations of their products on the shelves of a supermarket. This task can be accomplished by anyone with a mobile phone. In this project the aim is to develop a software which will help companies to create/manage such tasks. Also a mobile app will be developed for people in order to track/complete tasks created by companies.

3.Collaborative File Editing (2 students):
In this project the aim is to build a tool which can be used online to edit a file collaboratively. Users should be able to insert text and see what others are adding at the same time. The system should also keep the old versions of the text and be able to restore the older versions. The text processor will also have some basic text editing functionality.

4. Lecture Notes Sharing System (2 students)
In this project the aim is to build a mobile application which will allow students to share their lecture notes. Students will be able to submit documents and images to the system for sharing and there will be a general notes search utility.

5. Online Assignment Evaluator (3 students)
This project aims to build a system which will check the correctness and resource utilization of programs. Instructors will define the correct input and outputs. Students will upload their programs and the system will run these programs against the given inputs. At the same time the system will also analyse the time and space utilization of the programs. The specific programming languages that will be supported will be determined during the design phase.

Tarkan Aydın

1) Precise Temperature Controller with Peltier. (2 students)

The students should build a Arduino based controller to control the temperature of a specific lab equipment.

2) PCB printer with UV light. (2 students)

The students should PCB printer using a Blu-Ray™ pickup laser diode to sensitize Dry-Film: a photoresist material very popular to print PCB's

3) 3D laser scanner (2 students)

The students should build a simple 3D laser scanner using a fixed laser source, illuminating a line and determining the 3D shape of an object that is rotating on a platform. The 3D shape will be determined based on the reflected light.

4) VR Glass for Virtual Reality Application (2 students)

The students should build a simple head mounted display system similar to Oculus Rift.

5) Yogurt machine (2 students)

The students should build a simple yogurt machine which analyse light spectrum of milk to measure fermentation level of yogurt.

Övgü Öztürk Ergün

1. Face Avataring (2 students)

2. Image Recognition via Neural Networks (2 students)

3. Mobile Application Development (2 students)

4. 3D Marketing via AR(Augmented Reality) Technologies (2 students)

5. Multimedia Data Transfer via Cloud Communication (2 students)