# SUMEIRA YOUSUF

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## Professional summary

A hard working and self motivated person who gets thrilled by the opportunity to challenge me in my skills and make it grow.Career oriented individual seeking a position with a high level of professionalism, patience Flexible with working in all areas of the company to help boost profits that benefit the company. Seeking a position that promotes best practice and working experience on multiple projects. I would like to be part of a successful team and intend to do my work at best of my abilities.

## Education

**UNIVERSITY OF KASHMIR**

- Master of Technology (M.Tech) in Computer Science | CGPA*:* ***9.31 /10*** ***2018-2021***
  ***Position: 1st with Gold Medal***

**UNIVERSITY OF KASHMIR**

- Bachelor of Technology (B.Tech) in Computer Science Engineering | CGPA*:* ***7.71*** ***2012-2017***

**MALLINSON GIRLS SCHOOL**

***Higher Secondary (XII)***

- JKBOSE (The Jammu and Kashmir state board of school education) | CGPA*:* ***8.48*** ***2010***

**MALLINSON GIRLS SCHOOL**

***Secondary (X)***

- JKBOSE (The Jammu and Kashmir state board of school education) | CGPA*:* ***9.26*** ***2008***

## Skills

**Programming:** | C| C++|Java.
**Web Applications:** Html | Css |Java Script.
**Other**: Data Structures, Network Security, Deep Learning, Machine Learning.
**Soft Skills** | Verbal and written Communication | Detail oriented | Active listening | Problem solving | Multitasking | Customer needs assessment | phone and chat skills | Time management | Resolving customer issues | Team Leader| Motivation| Microsoft Applications proficiency| MS Office | Business Operations | CRM| Strong Work Ethics | Ability to accept and learn from criticism | Public speaking.

## Academic Projects

***LANE DETECTION IN AUTONOMOUS VEHICLES BUILT USING SEMANTIC SEGMENTATION***

***This project has been designed to detect lanes based on machine learning built using machine learning CNN, Python, Keras, NumPy, Tensorflow.***

- Created a **semantic segmentation** model that takes an image as an input, and provides us output, a **category classification** for every pixel. It uses computer vision
- Ideated and developed a model which perfectly worked with offline test data set with 99% accuracy, thereby eliminating scalability issues.
- It uses a **CNN** which consists of **an encoder and decoder network**.
- Encoder is the part of the algorithm network structure to **extract** image features.

- Decoder: This layer is widely used for the **pixel-wise classification** task where the feature maps have to be restored to original input image size. Its aim is to up-sample the image to get the same resolution as the input image.
- The final **deconvolution layer** ends with one filter, as the image is **returned image in the 'G' color** channel, as we want the predicted lanes to be in green.
- The accuracy was **99%** with each epoch where **IOU** of road pixels had high class score and helps to detect a trajectory that is safe and efficient.

## VEHICLE DETECTION

***This project has been designed to detect vehicles based on machine learning built using HOG, Python, Keras, NumPy, Tensorflow and SVM.***

- Built a model in python which uses **Histogram of Oriented Gradients (HOG)** feature extraction on a labelled training set of images.
- It Trains a Linear Support Vector Machine **(SVM)** classifier.
- It Implements a **sliding-window technique** and uses the trained SVM classifier to search for vehicles in images.
- The model runs the pipeline on a video stream and creates **a heat map** of recurring detections frame by frame to reject outliers and follows detected vehicles.
- We finally estimate a **bounding box** for vehicles which are detected.
- Implemented multiprocessing and python libraries to solve scalability challenges and provides a better frame rate of average 5.5 fps which is far better than the cv model.
- The model was able to detect vehicles **with 99.26% efficiency.**

## DEEP LEARNING IN AUTONOMOUS VEHICLES

***Designed a simulation model of self driving system using imitation learning policy "Behavioral Cloning ,python and PyTorch***

- Using behavioral cloning, we give raw sensor data as input to train our network.
- The model learns to imitate the actions of the expert system.
- The output of the network is the driving policy, represented by desired steering angle and/or acceleration or breaking.
- To build the training dataset, we collected about 72 hours of real-world driving videos.
- During the evaluation, the car was able to drive itself with accuracy of 98%.

## FREELANCING ANDROID APPLICATION

***An android application which provides a platform for developers and employers to interact with each other and get the projects done within the deadline by hiring the developers with suitable profiles using MySQL, PHP, Apache Tomcat server, Java and Android Studio.***

- It is **a responsive application** and works comfortably on any platform.
- It provides separate **profiles for employers and freelancers** where both profiles have different features in their corresponding navigation drawers.
- The application provides **Push Notifications, feedback options, chat facility, push project, bid project settings, inbox, client verification and authentication.**
- Employers post the project, Choose the perfect freelancer, browse the freelancer profiles, chat in real time and pay when satisfied.

## Academic Achievements

- **GOLD MEDAL IN M.TECH CS** |Received the award on 25-August-2021 through Kashmir University for securing First class First position in Master Of Technology in Computer Sciences with certificate of merit.