

# Usama Hasan

## Computer Scientist

I'm lost boy from neverland who usually hangout with his laptop. To work on problem that include modeling mathematical ideas to make machines think. Plus I hack a lot on PyTorch.



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## WORK EXPERIENCE

### Research Assitant

National Center of Artificial Intelligence,  
PUCIT

01/2020 - Present

Lahore, Pakistan

A National Initiative for Artificial Intelligence

3d Object detection for autonomous vehicles.

- Systematic literature review on methods of 3d object detection using deep neural network.
- Trained and Tested state of the art deep learning model for 3d object detection such as PV-RCNN, Point RCNN, Complex YOLO and Point Pillars etc.
- Deployed it as a Micro Service (MaaS), which takes virtual point cloud from unity simulation and returns the detected object mainly cars and pedestrians.

Contact: Waqar Hussain - waqar.hussain@pucit.edu.pk

### Research Assistant Machine Learning Lab

Al-Khawarizmi Institute of Computer  
Science UET, Lahore

10/2019 - 12/2019

### Python/Flask Developer Freelance

07/2019 - 10/2019

I built a small content management system for a client.

### Computer Vision/Python Developer Veeve.io

11/2018 - 07/2019

AI powered Shopping.

## EDUCATION

### Bachelor of Computer Science UMT, Lahore

08/2014 - 03/2019

Thesis

- Malware Detection  
Using Deep Neural  
Networks

## SKILLS

Python

Deep Learning

ComputerVision

C++

STL

Machine Learning

PyTorch

Linux

Data Visualization

Flask

PCL

## PERSONAL PROJECTS

### Codebase of RCNN. (09/2020 - Present)

- Inspired by detectron2 and mmdet which are state of art libraries for object detection, I started a open source project which is currently in the development phase to implement a complete API for object detection. The whole motivation behind this is to learn and collaborate with people from different origins. It's not public yet, but will be available soon.

### Malware Detection Using Deep Neural Networks (FYP) (03/2018 - 07/2018)

- Our aim was to classify different malware families using deep neural networks. The dataset comprise of Microsoft Kaggle 2015 training set and the binaries that were collected in an isolated environment using cuckoo sandbox. The models that we trained to classify dataset were MLP, CNN and Stacked Autoencoder and obtained a testing accuracy of 87%.

### YOLO's implementation in C++ using Libtorch for faster performance (08/2019 - 10/2019)

- Deep learning models were mostly coded in python or R, both the languages doesn't support threading, hence they perform very bad in deployment. With the release of C++ Api of torch and tensorflow, we can achieve high-end deployment performance.

## ACHIEVEMENTS

Outstanding Diplomat Award BNU MUN (02/2017)

Curator UMT Lahore Data Hackathon 2018

Organized data hackathon in supervision of Dr Shahid Awan.

## LANGUAGES

English



Urdu



## INTERESTS

Debating

Chess

International Relations

Teaching

Mathematics

Linear Algebra