

# Usama Muddassar



## About me

A self-motivated person with a sound technical knowledge, who is looking for greater opportunities and professional growth. Intrigued and inclined towards areas of computer vision, machine learning, image processing and signal processing.

## Areas of interest

Machine learning • Computer Vision • Signal Processing

## Contact

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## EXPERIENCE

10/2021–Present	<b>Junior Research Officer</b> PAKISTAN AIR FORCE · Islamabad Internet traffic analysis for encrypted data and to analyze packet data using C#. To write code to find encrypted and plain pairs in a pcap file. Trained a model using python to analyze encrypted data in packets. Worked on Corel Dev Board and on NVIDIA Jetson Nano Board.
10/2020–09/2021	<b>Trainee Engineer</b> NRTC · Islamabad Planning of fiber routes and power routes for a safe city concept. Planning and placement of surveillance cameras using SketchUp.
04/2019–04/2020	<b>Research Assistant</b> NCAI (COMSATS UNIVERSITY) · Islamabad Development of skull removing algorithm using image pre-processing techniques. Comparison of ML techniques with image pre-processing methods.
08/2017–05/2019	<b>Lab Engineer</b> CASE UNIVERSITY · Islamabad Supervised students in lab tasks and delivered them lectures of Introduction to Computing, Micro Controller Architecture, Object Oriented Programming, Programming Fundamental and Signal and System Processing during this duration.

## EDUCATION

09/2016–11/2019	<b>MS Electrical Engineering</b> DIGITAL SIGNAL & SYSTEM PROCESSING · SEecs, NUST, Islamabad
02/2012–02/2016	<b>BS Electrical Computer Engineering</b> ELECTRICAL ENGINEERING · COMSATS Institute of Information Technology, Islamabad

## PUBLICATIONS

**2020** *Bowling Action Analysis using Microsoft Kinect Xbox 360, iCoMET.*

## LANGUAGES

**Urdu**  
**English**

## ACHIEVEMENTS

- Secured 7th position in bachelor's batch.
- Received continuous scholarship from ZTBL on basis of F.Sc exams result.
- Secured 3rd position in Zonal Science Exhibition (2010-2011), Fazaia Intermediate College Competition.

## COMPUTER SKILLS

- **Programming languages:** C++, C, C#, Python, Verilog, Assembly, HTML and React Js.
- **Professional Software:** MATLAB, Microsoft Visual Studio, DevC++, Spyder, Proteus, Modelsim and Xilinx.
- **Application Software:** MS Office, Adobe Photoshop, Filmora, Adobe Illustrator etc.

## PROJECTS

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### MS Thesis

- Ground truth Data Collection for Visual SLAM Methods for Benchmarking Localization and Loop Closing Methods in which I have collected data from MINOS simulator and analyzed its ground truth using different techniques. I have compared my data set with other data sets and evaluated it. In thesis image processing and computer vision techniques were used to decide the originality of ground truth. The main focus was on the field of robotics and computer vision.

### Final Year Project

- Bowling Action Analysis using Microsoft Kinect Xbox 360 (FYP), in which we have implemented a system for bowling action analysis using marker-less and marker-based techniques to find out the elbow flex angle of bowler. We have used calibration and triangulation to calculate 3D coordinates of markers to find out the elbow flex angle. It was related to image processing and computer vision.

### Semester Projects

- Rain detector with help of transistors and Light Dependent Resistor (LDR).
- Power Supply.
- Digital Thermometer.
- Traffic Light Control.
- Traffic Light Control on FPGA.
- Snake and Ladder game using Java.
- Mixer in MATLAB using shelving filters.
- Intelligent Car Parking System in trilogy on Program Logic Control.
- Hash Table of Student Database on DevC++.

## CERTIFICATION

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- 06/2023** Video editing, animation and vlogging, DigiSkills.
- 06/2023** Graphic Design, DigiSkills.
- 05/2023** Machine Learning, AI & Data Science, eHUNAR.
- 05/2023** UI/UX Designing, eHUNAR.
- 07/2022** Photoshop 2021 Essential Training: The Basics, LinkedIn.
- 06/2022** Foundations: Data, Data, Everywhere (Coursera), Google.
- 01/2022** Visual Elements of User Interface Design (Coursera), California Institute of the Arts.
- 01/2022** Machine Learning with Python (Coursera), IBM.
- 12/2021** Chinese for Beginners (Coursera), Peking University.
- 12/2021** How to Create your Udeemy Course (Udeemy), Udeemy Instructor Team.
- 12/2021** Introduction to Data, Signal, and Image Analysis with MATLAB (Coursera), Vanderbilt University.
- 04/2021** Front-End Web Development with React (Coursera), The Hong Kong University of Science and Technology.
- 06/2020** Python Project - pillow, tesseract, and opencv (Coursera), University of Michigan.
- 05/2020** Build Your First Android App (Coursera), CentraleSupélec.
- 04/2020** Python data structure (Coursera), University of Michigan.
- 03/2020** Programming for Everybody (Getting Started with Python) (Coursera), University of Michigan.
- 11/2014** Certificate for Controller Design using MATLAB, COMSATS Institute of Information Technology.
- 12/2012** Certificate for Project Exhibition Fall 2012, COMSATS Institute of Information Technology.

## EXTRA CURRICULAR ACTIVITIES

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- Playing badminton, table-tennis, cricket, football, chess, checkers, snooker, e-gaming and graphic designing

## REFERENCES

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- Would be provided on demand.