

Usama Muddassar

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Personal Profile

A versatile person with sound technical knowledge and on-hand industrial experience, looking for an Institute to enhance knowledge and polish technical skills. Intrigued and inclined towards areas of computer vision, machine learning, image processing and signal processing. Searching mostly for machine learning, data engineer, MATLAB programming, C# desktop application development and Python development positions.

Education

National University of Science & Technology

2019

Master of Science in Digital Signal & System Processing

Islamabad, Pakistan

COMSATS Institute of Information Technology

2016

Bachelor of Science in Electrical Computer Engineering

Islamabad, Pakistan

Experience

Air University

Oct 2021 – Present

Research Engineer

Islamabad, Pakistan

- Internet traffic analysis for encrypted data using C#.
- Developed a code to find encrypted and plain pairs from a PCAP file.
- Trained a model using Python to analyze encrypted data in packets.
- Worked on forensic tools to extract useful data from different devices.
- Performed side-channel attack on AES using ChipWhisperer.

National Radio & Telecommunication Corporation

Oct 2020 – Sep 2021

Trainee Engineer

Islamabad, Pakistan

- Planning of fiber routes and power routes for a safe city concept.
- Placement of surveillance cameras using SketchUp.

National Center of Artificial Intelligence

Apr 2019 – Apr 2020

Research Assistant

Islamabad, Pakistan

- Development of skull removing algorithm using image pre-processing techniques.
- Comparison of machine learning techniques with image pre-processing methods.

CASE University

Aug 2017 – May 2019

Lab Engineer

Islamabad, Pakistan

- Supervised students in lab tasks and delivered them lectures of Introduction to Computing, Micro Controller Architecture, Object Oriented Programming, Programming Fundamentals and Signal & System Processing during this duration.
- Designing lab manuals, exams, quizzes and assignments for grading purpose.

Publications

Journal Article

One step back, two steps forward: learning moves to recover from SLAM tracking failures
Advanced Robotics, 2024

Conference Proceeding

Bowling Action Analysis using Microsoft Kinect Xbox 360: December 2019

3rd International Conference on Computing, Mathematics and Engineering Technologies (iCoMET), 2020

Projects

Ground truth Data Collection for Visual SLAM Methods for Benchmarking Localization & Loop Closing Methods (Master Thesis)

National University of Science & Technology

- * Collecting data from MINOS simulator and analyzed its ground truth.
- * Calibrated simulator based environment to get exact location of robot in the scene.
- * Compared data set collected from simulator-based environment with other data sets and evaluated it using image processing and computer vision techniques to decide the originality of ground truth.

Bowling Action Analysis using Microsoft Kinect Xbox 360 (Final Year Project)

COMSATS Institute of Information Technology

- * Implementation of a system for bowling action analysis using marker-less and marker-based techniques to find out the elbow flex angle of bowler in real-time.
- * Calibration of Xbox Kinect 360 and used triangulation to calculate 3D coordinates of markers to find out the elbow flex angle.

Semester Projects

COMSATS Institute of Information Technology

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

Achievements

Secured 7th position in bachelor's batch, COMSATS Institute of Information Technology.	2016
Received continuous scholarship from ZTBL on basis of F.Sc exams result, Zarai Taraqiati Bank Limited.	2016
Secured 3rd position in Zonal Science Exhibition (2010-2011), Fazaia Intermediate Colleges.	2011

Interests

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

Languages

- English.
- Urdu.

Skills

Languages: MATLAB, Python, C++, C#, Verilog and Java.

Technologies: TensorFlow, NumPy, Scikit-learn, Pandas, Matplotlib and Android SDK

Concepts: Compiler, Operating System, Virtual Memory, Encryption, Decryption, Machine Learning, Neural Networks, Convolutional Neural Network and Deep Neural Network.

Soft Skills: Time management, Teamwork, Problem-solving, Documentation, Leadership, Logical thinking, Presentation skills and Communication skills.

References would be provided upon request.