Bilal Arshad

Software Engineer
Lahore, PK | +92 3456896277 | bilalmirzh500@gmail.com

OBJECTIVE

Recent Electrical Engineering graduate from ITU, eager to leverage strong programming and development skills in a mission-driven organization. Passionate about continuous learning and contributing to impactful projects in a dynamic, growth-oriented environment.

EDUCATION

Information Technology University (ITU) **Lahore, Pakistan**
BS Electrical Engineering (CGPA 3.2) *2020 — 2024*

Final Year Project: Electrical Impedance Tomography System for Biomedical Applications (Machine Learning)

- **About:** The EIT device is an imaging device just like MRI, CT-scan or Ultrasound. It used current that we inject in the body and obtain voltage measurements from it to produce an image that could tell us if there are any anomalies or tumors inside the body.
- **Circuit Development:** Designed and implemented essential circuits, including VCC (voltage-controlled current source), commutation matrix, amplifier, and lock-in filter, to capture precise voltage measurements.
- **Image Reconstruction:** Utilized the EIDORS software to reconstruct internal images from the voltage data obtained, providing visual insights into the body's electrical impedance variations.
- **ML/DL:** Applied machine learning (ML) and deep learning (DL) algorithms, particularly Convolutional Neural Networks (CNN), to analyze and validate the reconstructed images for anomalies, enhancing diagnostic accuracy.

WORK EXPERIENCE

Software Motion
Algorithm Software Engineer *July 2024 — Dec 2024*

- Developed and optimized C/C++ algorithms for automotive systems, focusing on ADAS modules.
- Analyzed test result files and debugged complex software issues related to environmental module.
- Designed algorithms for real-time decision-making in automotive systems, ensuring optimal performance.
- Collaborated with cross-functional teams to implement and test algorithms, ensuring system reliability through unit testing.

Information Technology University
Research Assistant *Feb 2023 — June 2024*

- Conducted in-depth research on previous projects related to EIT technology.
- Designed and implemented the hardware circuit for the EIT system.
- Utilized image reconstruction software to enhance the functionality of the system.
- Integrated Machine Learning techniques to detect anomalies in the reconstructed images, contributing to advancements in biomedical imaging technology.

Contract.PK
Software Engineering Intern *Aug 2022 — Sept 2022*

- Designed and developed websites using JavaScript, React JS, and Node JS.
- Built responsive layouts and optimized overall website performance.
- Integrated APIs to ensure smooth functionality, gaining a comprehensive understanding of web development.

SOFTWARE PROFICIENCY

- Google Co-Lab, PyCharm, Docker
- GitHub, VS Code
- Microcontrollers, Proteus, Multisim, MATLAB
- SolidWorks, Cisco Packet, WordPress
- Microsoft 360 (Excel, PowerPoint, Word)

SKILLS

- C/C++
- HTML/CSS/JS
- React JS, Node JS, SQL
- CV/ML
- Python (Pandas, TensorFlow)

PROJECTS

Human vs AI Rock Paper Scissors Game

- Developed a Rock Paper Scissors game using Machine Learning, including data augmentation, and building a Convolutional Neural Network (CNN) model to accurately recognize hand gestures.
- Designed and implemented a user-friendly interface, enabling real-time gameplay against the AI, showcasing the model's capabilities and performance.

IOT based Smart Mirror

- Integrated NTP server for precise timekeeping and OpenWeatherMap API for real-time weather updates which are displayed in the Smart Mirror.
- Implemented face recognition using a camera and established a Python server for displaying saved images, showcasing versatility and proficiency

Drone Delivery Operating System

- Developed a Drone Delivery Operating System with path detection, obstacle avoidance, and multitasking capabilities using threads.
- Implemented a user-friendly UI for seamless interaction with the drone delivery system, showcasing a holistic approach to real-time logistics.

CERTIFICATES & AWARDS

- Introduction to Generative AI course by Coursera
- Python Programming with AI/ML course by Coursera
- Developing Front-End Apps with React course by Coursera
- Won 1st position in Capstone Final Year Project Poster Competition
- Participated in Code Rush Programming Competition by GDSC
- Participated in IEEEXtreme Programming Competition 16.0 and 17.0

EXTRA-CURRICULARS

IET On Campus ITU *President* *Sept 2023 — Aug 2024*

Leading as President of the tech society, I organize and lead events focused on innovation, technology, and robotics, fostering a dynamic and collaborative environment within the student community.

IEEE ITU Student Branch *Publicity Lead* *Sept 2022 — Aug 2024*

As the Publicity Lead, I oversee and guide a diverse team of designers, photographers, and writers to strategically market and promote events, effectively enhancing the visibility and engagement of our tech society activities.

UGRAD STEM Outreach *Co-Lead* *April 2024 — April 2024*

Volunteered and co-led a STEM outreach program funded by UGRAD, where we introduced engineering and robotics to underprivileged students through hands-on activities.