IBRAHIM ARSALAN BAIG

www.linkedin.com/in/Ibrahim | +971 545 242 070 | ibaig9221@gmail.com | Sharjah, UAE

HIGHLIGHTS OF QUALIFICATIONS

- Solid foundation in hardware and software integration, including microcontrollers and embedded systems.
- Proficient in programming languages such as C, C++, Python, and Java.
- Experience in circuit design, simulation, and system-level design using tools like MATLAB and Verilog.
- Knowledge of computer architecture, networking, and IoT applications.
- Strong analytical and problem-solving skills applied to real-world engineering challenges.

EDUCATION

Bachelor of Science in Computer Engineering
American University of Sharjah, UAE
Expected Graduation: June 2025

PROJECTS

Capstone Group Project | Maritime Vessel Detection Using a Network of Marine Radars via a Simulation in Unity

We developed a maritime vessel detection system using a network of marine radars simulated in Unity to enhance maritime surveillance in the UAE. The project addressed traditional radar limitations by integrating deep learning with buoy-mounted radars, enabling unmanned, real-time maritime situational awareness. A scalable and cost-effective solution was designed to train and test vessel detection capabilities in a simulated environment. The system demonstrated high detection accuracy, achieving an **F1-score of 0.938** using the CenterNet deep learning model.

IoT Home Automation System

Designed and implemented a smart home security system integrating IoT, RFID authentication, and sensor-based automation for enhanced safety. Features included secure access control, real-time surveillance, environmental monitoring, and automated lighting. The system provided remote monitoring via the ThingSpeak IoT platform and a buzzer alarm for intrusion detection, ensuring a multi-layered security approach.

LC3 Machine Code Decoder

Developed a C++ program to translate hexadecimal LC-3 machine code into human-readable instructions. The program decodes each instruction step-by-step, extracting opcodes and operands, then converting them into corresponding LC-3 assembly language. This implementation provides a straightforward method to interpret LC-3 assembly instructions from their hexadecimal representation, aiding in program analysis and debugging.

TECHNICAL SKILLS

- **Programming**: C, C++, Python, Java, Verilog, MATLAB
- **Tools**: Unity, Git, MATLAB, SPICE, Wireshark
- **Networking**: LAN, WAN, IoT Protocols
- **Operating Systems**: Windows, Linux, Unix

INTERNSHIP

Computer Engineer Intern
Procom Technologies, Riyadh, KSA [December 2022 - January 2023]

- Completed in-person training focused on **HCIP Datacom Core Technology**, including Advanced Routing and Switching concepts.
- Gained hands-on experience with **Huawei eNSP software** for data communication and networking simulations.
- Conducted site visits to **Ramla Fairmont Serviced Residence Hotel** and **Hitachi/ABB factory**, observing real-world implementation of data networking and security devices.
- Supervised technicians during the installation and maintenance of **routers, switches, and terminal blocks** in networking cabinets.
- Configured and tested the **Huawei NE8000 M6 Router**, comparing functionality against the **Huawei CE Router Acceptance Test** Guide.

EXTRACURRICULAR ACTIVITIES

- Member of the official **AUS Cricket Team** [Spring 2022]
- Member of the **Indian club cricket team** in the AUS Olympics [Fall 2022]

LANGUAGE SKILLS

- Fleunt in English and Urdu
- Semi-fluent in Hindi and Arabic