ALIMUL HAQUE KHAN

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EXPERTISE

• Embedded System Design • IoT, IIoT, IoMT • Analog Circiut Design • Schematic and PCB • Design, develop, debug, troubleshooting • Sensor • Hardware, Firmware and Software

SKILLS

• Programming and scripting tools: C, C++, Python, MATLAB, MS Excel
• Web: HTML, CSS, SQL, PHP, NodeJS
• Embedded Platform: Arduino, ESP, Raspberry Pi, STM32
• Document Processing: MS Word, LaTeX, Mendeley
• OS: Linux, Windows, MacOS
• Version Control: Git, Github

RELEVANT PROFESSIONAL EXPERIENCE

Intern: Mitacs- Thermonalysis, University of Saskatchewan: July 2024 – December 2024

Project: Automatic Temperature Monitoring System

• Developing an automatic temperature monitoring system for restaurant kitchens using IoT and thermal cameras for non-invasive, contactless temperature measurement.
• Integrating data transmission to a database via NestJS API for real-time monitoring.
• Conducting testbed setup, experimental runs, and raw data collection.
• Applying machine learning techniques for sensor calibration to enhance accuracy

Research Assistant: University of Saskatchewan, SK, Canada January 2023 –

• Conduct research and assist in the preparation and revision of scientific manuscripts for publication in reputable journals and conferences.
• Utilize statistical software to analyze and interpret collected data, providing valuable insights and contributing to the research findings.
• Collaborate with a multidisciplinary team to facilitate research projects, fostering effective communication and teamwork.

Research and Development Associate: WIoT Inc. SK, Canada Oct 2020—December 2022

• Designed and developed Hardware for a Level Tracker sensor for hazardous environments in the mining and energy industry.
• Successfully developed and deployed firmware for microcontrollers such as STM32, NodeMCU, and Arduino, resulting in improved product performance and reduced debugging time.
• Created and tested multiple sensor test beds, conducting rigorous testing and validation of firmware and PCB designs to achieve compliance with industry standards and ensure high reliability.
• Implemented remote sensor deployment strategies, resulting in efficient data collection and analysis.
• Actively engaged with external vendors and suppliers for technical evaluations and recommendations.

Research Assistant: University of Saskatchewan, SK, Canada May 2016 – Apr 2018

• Developed iSensor for capsule endoscopy using Arduino, Raspberry Pi, MATLAB, and Python.
• Collaborated with 3rDi Inc. to design a game controller for individuals with disabilities, controlled by head movement and eye blinking.

• Prepared technical documents, journal articles, and funding applications.
• Demonstrated a solid understanding of analog and digital circuit design principles, ensuring reliable and efficient hardware functionality.
• Published articles in conferences and journals, showcasing research findings and contributions

Lecturer: Bangladesh University, Dhaka, Bangladesh Jun 2010 - Apr 2016

• Coordinated training courses on PCB design, MATLAB, and microcontroller programming, ensuring a strong focus on deliverables and the ability to plan work.
• Supervised students' embedded system projects and provided technical support, further showcasing my understanding of interdisciplinary dependencies related to the discipline.
• Fostered teamwork, critical thinking, and problem-solving skills among students.

Technical Consultant: Advanced Micro Energy Inc., Dhaka, Bangladesh Oct 2012 - Aug 2013

• Developed and installed rooftop solar systems, solar irrigation pumps, and smart building solutions, underlining my ability to review technical deliverables (specifications, datasheets, drawings, etc.).
• Provided technical support to sales teams, vendors, and customers through email, phone, and on-site visits, demonstrating my excellent interpersonal and communication skills.
• Conducted troubleshooting and resolved customer issues.
• Developed project-specific engineering procedures to enhance the efficiency of project execution.

Design Engineer: Pulser Semiconductor Device, Dhaka, Bangladesh Feb 2010 - Jun 2010

• Designed circuits for various applications, including IPS, USP, solar charge controllers, and industrial status meters.
• Provided application and design support for protection relays, leveraging knowledge of industrial power distribution and control systems.
• Conducted product training presentations, created technical materials, and performed competitor analysis.
• Gathered customer feedback and contributed to new product specifications.

EDUCATION

• **MSc in Electrical Engineering**, University of Saskatchewan, Saskatoon, SK, **Canada, May 2018.**
• BSc in Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, Mar 2009.

MEMBERSHIP and TRAINING

• APEGS • IEEE • IEB
• Mental Health First Aid (MHFA) certificate • Safety Resource course • Laboratory Safety Course
• Programming of PLC for Industrial Automation, Maintenance, and Troubleshooting
• Embedded system design by FPGA and microcontroller • VFD Drives

VOLUNTEERING and COMMUNITY INVOLVEMENT

• Currently serving as General Secretary of Bangladeshi Community Association Saskatchewan