

Seam Saif

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SUMMARY

Recent **Electrical and Electronic Engineering** graduate from the Islamic University of Technology (IUT) with hands-on experience in embedded systems, circuit and PCB design, electrical machines and signal processing, plus industrial training in telecom, power generation and electronics manufacturing. Looking for an EEE role where I can contribute to design, testing and problem-solving while continuing to learn.

EDUCATION

B.Sc. in Electrical and Electronic Engineering Islamic University of Technology (IUT), Gazipur, Bangladesh	CGPA 3.43 / 4.00 Aug 2022 – Oct 2026
HSC , Science BAF Shaheen College, Dhaka	GPA 5.00 / 5.00 2022
SSC , Science Ideal School and College, Dhaka	GPA 5.00 / 5.00 2019

PUBLICATION

Journal Article	UNDER REVIEW
[J1] S. Saif and I. Jahan, “ Probabilistic deep learning for cost-sensitive taxi dispatch: When does forecast accuracy translate into decision value? ” <i>Expert Systems with Applications</i> (Elsevier), manuscript ESWA-D-26-42120, submitted Oct 2026. [First author]	
Undergraduate Thesis	COMPLETED
• “A Study on Design and Sensitivity Analysis of Quantum-Corrected Carrier Confinement in IGZO/ITZO Dual Channel TFTs ”, covering device-level modelling and sensitivity analysis of oxide thin-film transistors.	
Conference Paper	SUBMITTED
[C1] S. Saif , I. Jahan, A. M. Maisha and M. M. Billah, “ 6-Bit Computer Implementation with Optimized Display and Reduced T-states ,” <i>1st IUT International Conference on Core Engineering & Technology (IUT-ICCET 2024)</i> , Department of EEE, Islamic University of Technology, Gazipur, Bangladesh. [First author]	

TECHNICAL SKILLS

PROGRAMMING	Python, C/C++, MATLAB, 8086 Assembly, 8051 (MCS-51) Assembly
EMBEDDED & IOT	Arduino, ESP32, AT89C51, microcontrollers and microprocessors, PLC, firmware development, sensor interfacing, I ² C, relay and servo control, ThingSpeak IoT cloud
CIRCUIT & PCB	Proteus Design Suite (schematic capture, simulation, PCB layout), PSpice, OrCAD; Verilog, VHDL, digital logic design, VLSI and computer architecture
SIGNAL PROCESSING	Digital signal processing, Mel-spectrogram feature extraction, sliding-window pattern matching, peak detection, Librosa
MACHINE LEARNING	Machine-learning-based forecasting; scientific Python stack: NumPy, SciPy, Matplotlib
POWER & MACHINES	Three-phase motor starting, star-delta starters, contactors, on-delay timers, overload relays, MCB/RCCB, switchgear, panel wiring, SCADA; PSIM power-electronics simulation
RF & NETWORKS	Atoll, NYUSIM, LinkPlanner, RF network planning, mobile and core network architecture
TOOLS	Git, GitHub, Arduino IDE, emu8086, ASEM-51, L ^A T _E X, Microsoft Office, Canva; AI tooling (Claude, ChatGPT, Gemini, DeepSeek)
PROFESSIONAL	Leadership, strategic thinking, research and analysis, teamwork, technical communication

ACADEMIC PROJECTS

SAP-1 Architecture-Based 6-Bit Computer GitHub	<i>Proteus / Digital Logic</i>
• Designed the instruction register, ALU, display unit and PCB layouts for a 6-bit SAP-1 CPU in Proteus that executes each instruction in 5 T-states with decimal 7-segment output [C1]. ▶ Video demo	

Smart LPG Gas Detection and Safety System

ESP32 / IoT

- Wrote **ESP32** firmware that reads gas and flame sensors and drives a **four-state safety response** (exhaust fan, water pump, servo shutoff, alarm) with live **ThingSpeak** monitoring over Wi-Fi.

Multi-Sensor Home Automation System

Arduino Nano / Instrumentation

- Combined **five sensor-driven functions on one Arduino Nano**: light-based activation, temperature-controlled fan, smoke alarm, ultrasonic tank-level display and automatic water dispensing.

8051 Tic-Tac-Toe Game

AT89C51 / MCS-51 Assembly

- Programmed tic-tac-toe in **8051 assembly** with two-player and **Player vs. AI** modes, keypad input, LCD prompts and a 3×3 LED board, simulated in Proteus.

Audio Pattern Detection via Mel-Spectrogram Matching

Python / DSP

- Built a **DSP** pipeline in Python (Librosa, NumPy, SciPy) that matches **Mel-spectrogram** features with a sliding window and **detected 19 occurrences** of the target pattern with timestamps.

Star-Delta Three-Phase Motor Starter

Electrical Machines / Hardware

- Wired and commissioned a **440 V three-phase starter panel** with contactors, an on-delay timer and overload protection, **reducing motor starting current** through timed star-to-delta transfer.

Dynamic Table Sorter

8086 Assembly / emu8086

- Wrote an **8086 assembly** table manager that **sorts complete rows** by any user-selected column.

Typing Speed Test Application

MATLAB GUI / OOP

- Built a **MATLAB** GUI with timed, word-count and custom tests that reports **WPM and accuracy**.

INDUSTRIAL TRAINING

Robi Axiata PLC

DHAKA, BANGLADESH

- Mobile and core network operations, network architecture and service infrastructure.

Oct 2025

Bangladesh Atomic Energy Commission (BAEC)

SAVAR, BANGLADESH

- **3 MW TRIGA Mark-II research reactor**: instrumentation, safety and cooling systems.

Oct 2025

Ghorashal Training Center

NARSINGDI, BANGLADESH

- Thermal power plant: turbines, boilers, switchgear and **SCADA**-based control.

Oct 2025

Walton Hi-Tech Industries PLC

GAZIPUR, BANGLADESH

- **PCB assembly, SMT and production testing** on electronics lines; compressor and motor R&D.

Oct 2025

CERTIFICATION AND ACHIEVEMENTS

First author of a conference paper [C1] written as an undergraduate student.

English Language Certification

CEF **B2**

British Council Bangladesh

Mar – Apr 2019

- **Upper Intermediate** level after a 24-hour intensive course; CEF B2 maps to IELTS 5.5–6.5.

REFERENCES

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