

EDUCATION

Lappeenranta, Finland	LUT University	Sept 2024 - Jul 2027
<ul style="list-style-type: none"><li>Major: Computational Science and Artificial Intelligence, B.Sc.   Minor: Software and Systems Engineering</li><li>Programming Coursework: Cybersecurity, DSA, OOP, FoP, Advanced Database Systems, Web Programming, SQA, DevOps</li><li>Computational Coursework: Linear Algebra, Vector Analysis, Matrix Decomp, Multivariate Calculus, Probabilities &amp; Statistics</li></ul>		

WORK EXPERIENCE

Prime Tech Solutions Limited	Software & Data Engineer	May 2025 - Present
<ul style="list-style-type: none"><li>Designed &amp; developed the first census+survey data migration and SDMX system of Bangladesh for Govt. Bureau of Statistics.</li><li>Collaborated with cross-functional Govt. depts to ensure data accuracy, metadata curation integrity, &amp; policy compliance.</li><li>Leveraged knowledge in Python, ETL/ELT Pipelines &amp; Warehousing, Oracle, PostgreSQL, FastAPI, Pandas, SDMX, STATA, SPSS, Git.</li></ul>		
LUT University	Teaching Assistant	Sept 2025 - Present
<ul style="list-style-type: none"><li>Conducted weekly exercise classes in the Fundamentals of Programming in Python course and provided one-on-one support.</li><li>Developed attendance management and auto-grading system including project grader that overall improved productivity.</li></ul>		
Propaganda Cycle (Research Work)	Software Developer/Co-author	May 2024 - Present
<ul style="list-style-type: none"><li>Ongoing paper with researchers at UKassel and TU Dortmund using the data scraped by me from political figures on social media.</li><li>Leveraged knowledge in Statistics, Sentiment Analysis, Python, Selenium, OpenCV, Pillow, CTK, Matplotlib, Sqlite3, Pandas.</li></ul>		

ACTIVITIES

World Robot Olympiad (WRO)	National Coach	Jan 2023 - Dec 2023
<ul style="list-style-type: none"><li>Led a team in the Future Innovators segment (national), focusing on robot construction, software design, &amp; business analysis.</li><li>Guided two national teams' participation in international competition rounds, one team achieved an impressive, first time in the history of Bangladeshi participants, a silver award out of 451 global teams at WRO '23 Panama.</li></ul>		
Give Bangladesh Foundation	Web Developer	Sept 2023 - Present
<ul style="list-style-type: none"><li>Collaborated with African NGO, Awake Youth Initiative, &amp; built them a fundraising website for slum communities in Nairobi, Kenya.</li><li>Leveraged knowledge in Full Stack Web Development, Javascript, Git, Figma for UI/UX Design, SEO, and Google Analytics.</li></ul>		
Notre Dame IT Club	President, Robotics	Aug 2019 - June 2021
<ul style="list-style-type: none"><li>Organized a 3-day national tech event with 1100+ participants, 20+ robotics competitions by leading a team of 70+ volunteers.</li><li>Mentored 45+ national robotics/project teams, conducted 9 workshops along with 27+ robotics-oriented classes for 150+ students.</li><li>Was commissioned by my school's ICT dept to design and build a national curriculum-oriented teaching module: a combined demonstration of clock pulse generators, logic gates, flip flops, registers, counters, and a 7-segment display on a breadboard.</li></ul>		

AWARDS & ACHIEVEMENTS

Silver Medal • International Blockchain Olympiad (Hong Kong)	positioned among top national teams from 44 countries
Silver Honor • World Robot Olympiad - WRO (Panama)	first Bangladeshi coach to achieve top place among 77 countries
Silver Medal • Bangladesh Robot Olympiad	scored 2nd position among 20,000+ participants
Bronze Medal • Bangladesh Blockchain Olympiad	youngest developer to secure top national position at BCOLBD
National Finalist • NASA Space Apps Challenge	secured position among 2,000+ nationwide participants

PERSONAL PROJECTS

Block Meter	BLOCKCHAIN-BASED ELECTRICITY BILLING SYSTEM	Python, C++, Solidity
<ul style="list-style-type: none"><li>Devised an electricity billing system that eliminates non-technical losses by 100% and ensures transparency and immutability.</li><li>Utilized: Python, C++, Solidity, PHP, Javascript, Ethereum, IPFS, BigChainDB, AES Encryption, ESP32, ThingSpeak.</li></ul>		
Tethr	NETWORK TOWER POSITION OPTIMIZER USING MACHINE LEARNING	Python, C++
<ul style="list-style-type: none"><li>Developed an ML-powered robotic system to optimize 5G network tower locations using automated aerial and ground drones.</li><li>Incorporated non-parametric and density-based Mean Shift clustering algorithm, and Gradient Descent for optimization.</li><li>Utilized: Python, C++, Scikit-Learn, OpenCV, YoloV8, Pandas, Raspberry Pi, Jetson Nano, ROS, FastAPI, Tkinter.</li></ul>		
Spectre Bot & Spectre OS	LINE FOLLOWER ROBOT WITH CUSTOM OPERATING SYSTEM	C++
<ul style="list-style-type: none"><li>Spectre bot is a fully custom advanced line follower robot capable of achieving a maximum of 5m/s speed on track.</li><li>Spectre OS is a custom operating system designed to provide advanced control and debugging capabilities for line follower robots.</li><li>Utilized: C++, Arduino, ESP-32, TCRT5000 Sensors, PID controllers, OLED graphics, gear/servo motors, PCB designing, 3D printing.</li></ul>		
Assistive Device for Visually Impaired People	PROTOTYPE TEXT-TO-BRAILLE GLOVE FOR DIGITAL READING	C++
<ul style="list-style-type: none"><li>Developed a tactile feedback system embedded in a glove to emulate Braille chars on fingers, translating texts from digital sources.</li><li>Utilized: C++, Python, Arduino, ESP32, Tacile Feedback Motors, Type-C Charging, BLE &amp; WiFi Communication, 3D printing.</li></ul>		
Personal Website	MY PORTFOLIO FOR SHOWCASING PROJECTS (HAMIDURRK.COM)	Typescript
<ul style="list-style-type: none"><li>Built real-time client-side physics simulation world &amp; intergrated modern scroll-triggered animations using Framer Motion &amp; GSAP.</li><li>Utilized: Next.js, React, Typescript, Tailwind CSS, Framer Motion, GSAP, Physics.js, Lenis, SCSS, Vercel.</li></ul>		

SKILLS

Programming	Proficient: Python • Java • C++ • JavaScript • Typescript • SQL	Familiar: C • PHP • MATLAB
AI/ML & Data Pipelines	PyTorch • Scikit-Learn • OpenCV • YOLOv8 • Pandas • NumPy • R • SDMX • ETL/ELT	Data Modeling & Warehousing
Full-Stack & App Dev	React • Next.js • TailwindCSS • GSAP • FastAPI • Flask • Django • Selenium • Tkinter • Java Swing • Figma	
Databases	Oracle • PostgreSQL • MySQL • SQLite • Firebase • MongoDB	
IoT & Embedded	Arduino • Raspberry Pi • Teensy • ESP32 • STM32	Sensor and actuator integration
Blockchain & DLT	Ethereum • Solidity • Hyperledger Fabric • Multichain • IPFS	