

Md Hamidur Rahman Khan

Lappeenranta, Finland**LUT University****Sept 2024 - Jul 2027**

- **Major:** Computational Engineering, B.Sc. | **Minor:** Software Engineering
- **Programming Coursework:** DSA, OOP, Advanced Database Systems, Cybersecurity, Web Programming, SQA, DevOps
- **Computational Coursework:** Linear Algebra, Vector Analysis, Matrix Decomposition, Multivariate Calculus, Probabilities & Statistics

WORK EXPERIENCE**Software & Data Engineer****Prime Tech Solutions Limited****May 2025 - Present**

- Collaborated internationally with Awake Youth Initiative to develop a fundraising website that supports the African underserved slum communities in Nairobi, Kenya. Developed blogs, articles, landing pages, donation and marketplace pages.
- Leveraged knowledge in Full Stack Web Development, Javascript, Git, Figma for UI/UX Design, SEO, and Google Analytics.

Teaching Assistant**LUT University****Sept 2025 - Present**

- Conducted weekly exercise classes in the Fundamentals of Programming in Python course and provided one-on-one support.
- Developed attendance management and auto-grading system including project grader that overall improved productivity by 60%

Software Developer/Co-author**Political Propaganda Cycle (Researcr Work)****May 2024 - Present**

- Ongoing paper with researchers at UKassel and TU Dortmund using the data scraped by me from political figures on social media.
- Leveraged knowledge in Statistics, Sentiment Analysis, Python, Selenium, OpenCV, Pillow, CTk, Matplotlib, Sqlite3, Pandas.

ACTIVITIES**National Coach****World Robot Olympiad (WRO)****Jan 2023 - Dec 2023**

- Successfully led a team of 3 in the Future Innovator segment through the national round, mainly focused on the robotic system, software design, hardware construction, business analysis, and technical presentation.
- 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.

President, Robotics**Notre Dame Information Technology Club****Aug 2019 - June 2021**

- Organized a 3-day national tech event with 1100+ participants, 20+ robotics competitions by leading a team of 70+ volunteers.
- Mentored 45+ national robotics/project teams, conducted 9 workshops along with 27+ robotics-oriented classes for 150+ students.
- 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.

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

Bronze Medal • Bangladesh Blockchain Olympiad

youngest developer to secure top national position at BCOLBD

Silver Medal • Bangladesh Robot Olympiad

scored 2nd position among 20,000+ participants

Merit Based Scholarship • LUT University

achieved a 4,500 EUR/year scholarship for B.Sc. studies

PERSONAL PROJECTS**Block Meter BLOCKCHAIN-BASED ELECTRICITY BILLING SYSTEM****Python, C++, Solidity**

- Incorporated non-parametric and density-based Mean Shift clustering algorithm, and Gradient Descent for optimization.
- Won a Silver Medal in SDG 12 national teams from 44 countries at the International Blockchain Olympiad 2022 (Hong Kong).
- Secured Bronze Medal as the youngest developer to secure top national position in the Bangladesh Blockchain Olympiad 2022.
- Utilized: Python, C++, Solidity, PHP, Javascript, Ethereum, IPFS, BigChainDB, AES Encryption, ESP32, ThingSpeak.

Tethr NETWORK TOWER POSITION OPTIMIZER USING MACHINE LEARNING**Python, C++**

- Developed a robotic system that uses ML to optimize 5G network tower locations to solve cellphone signal abruptions.
- Integrated a custom-built drone and an automated LIDAR-based ground robot to automate the process of data collection.
- Incorporated non-parametric and density-based Mean Shift clustering algorithm, and Gradient Descent for optimization.
- Used YoloV8 for object detection and Jetson Nano for onboard computing to improve accuracy of the automated ground robot.
- Desinged a ground station using Tkinter to define the robot path, load the data, and visualize the results.
- Utilized: Python, C++, Scikit-Learn, OpenCV, YoloV8, Pandas, Raspberry Pi, Jetson Nano, ROS, FastAPI, Tkinter.

Spectre Bot & Spectre OS LINE FOLLOWER ROBOT WITH CUSTOM OPERATING SYSTEM**C++**

- Spectre bot is a fully custom advanced line follower robot capable of achieving a maximum of 5m/s speed on track.
- Spectre OS is a custom operating system designed to provide advanced control and debugging capabilities for line follower robots.
- Secured championship in the International Tech Carnival-DRMC 2020 and top positions in national tournaments with this bot.
- Utilized: C++, Arduino, ESP-32, TCRT5000 Sensors, PID controllers, OLED graphics, gear/servo motors, PCB designing, 3D printing.

Assistive Device for Visually Impaired People PROTOTYPE TEXT-TO-BRAILLE GLOVE FOR DIGITAL READING**C++**

- Developed a tactile feedback system embedded in a glove to emulate Braille chars on fingers, translating texts from digital sources.
- Became a national finalist in the NASA Space Apps Challenge 2022 by integrating this glove into an educational space arcade game.
- Utilized: C++, Python, Arduino, ESP32, Tactile Feedback Motors, Type-C Charging, BLE & WiFi Communication, 3D printing.

Social Media Bot AUTOMATED SOCIAL MEDIA INTERACTOR AND DATA SCRAPER**Python**

- Developed a bot that automatically interacts with Facebook and Instagram to increase user engagement and scrapes data.
- Currently writing a paper with researchers at University of Kassel and Technical University of Dortmund on Political Propaganda Cycle using the data collected by the bot from the political parties on the social media platforms.
- Designed a user-friendly GUI for easy interaction with data scraper using CustomTkinter for improving the debugging capabilities.
- Utilized: Python, Selenium, BeautifulSoup, OpenCV, Pillow, CustomTkinter, Matplotlib, Sqlite3, Pandas.

Personal Website MY PORTFOLIO FOR SHOWCASING PROJECTS (HAMIDURRK.COM)**TypeScript**

- Built real-time client-side physics simulation world & intergrated modern scroll-triggered animations using Framer Motion & GSAP.

- Utilized: Next.js, React, Typescript, Tailwind CSS, Framer Motion, GSAP, Physics.js, Lenis, SCSS, Vercel.

SKILLS

Software Technology	Proficient: Python • C • C++ • Typescript • Javascript • SQL • HTML/CSS Familiar: Java • PHP • Solidity • R • Solidity • MATLAB
Technology	Git • Pandas • Scikit-Learn • OpenCV • YoloV8 • Next.js • React • GSAP • MongoDB • Firebase • Flask • Django • Figma • Selenium
Hardware	Arduino • Raspberry Pi • Teensy • ESP32 • STM32 • Sensor and actuator integration in embedded systems
Language	English (IELTS: 7.5) • Finnish (A1 Level) • Bengali (Native) • Hindi (Spoken) • Urdu (Spoken)

REFERENCE

Tahsin Anam Data Engineer at Konecranes (Finland) • Email: tahsin.anam@konecranes.com • Phone: +358 45 2563790