

Jewel Nath

Software Engineer · AI Agents & Automation · Robotics

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SUMMARY

Software engineer with 2.5 years of experience, focused on AI. At Orbitax, I build .NET backend services and Angular features for a tax technology platform for multinational companies. At RoboAI, my startup, I build AI products, such as a team workspace where AI assistants do real work and an electronics shop whose AI plans the parts for a student's robot. I also build robots: OrbiBot maps a room, drives itself and takes commands from an AI agent.

EXPERIENCE

Orbitax · Software Engineer

📅 Aug 2026 – present · Associate Software Engineer, May 2024 – Jul 2026

A tax technology platform for multinational companies.

- Built features that help tax teams track and file every deadline across countries, including the OECD global minimum tax (Pillar Two): yearly roll-forward, duplicate checks, linked forms and a deadline dashboard.
- Led the reliability rebuild of a core platform feature, private workspaces where a company works on a copy of its data, from design decisions to documentation and release.
- Own production issues in my areas from first report to verified fix.

Stack: C#, .NET, ASP.NET Core, message-driven sagas, MongoDB, SQL, Angular, TypeScript, NgRx, Node.js, Python, NUnit, pytest

RoboAI · Founder & AI Engineer

📅 Jan 2024 – present · Dhaka, Bangladesh

A startup that builds AI and robotics products that solve real-world problems for teams, shops and learners. It began in 2024 by teaching robotics and programming to students, and relaunched as an AI studio in 2026.

- Built **AI powered Team OS** (teamos.site), one app where a small company runs its projects, people, time and expenses, and can ask AI to do the work. ChatGPT and Claude connect to it through an MCP (Model Context Protocol) server, and every AI action runs with the user's own permissions; an AI can request a payment, but only a person can approve it.
- Built the AI parts planner for **RoboAI Shop** (shop.robosai.one): a student describes a robot project and the AI picks the parts from stock. Prices and totals come only from the database, and the server strips any part or price the AI invents.
- Built robotics projects with the team, including a fire-fighting robot, line followers, a robotic arm and a conveyor-belt sorting system, and help school, college and university students design and build their own robots.

Stack: AI (MCP, OAuth 2.1, Gemini, ChatGPT and Claude connectors), web (TypeScript, Next.js, React, Supabase with Postgres, Vercel), robotics (Arduino, ESP32, Raspberry Pi, ROS 2, OpenCV, sensors and motor control)

School of Robotics, Cumilla · Programming & Robotics Trainer

📅 Mar 2021 – Mar 2024 · part time

- Taught school and college students to program and build robots, in workshops with the Cumilla Deputy Commissioner's Office across 10 upazilas and 30 schools and colleges, and coached students for the National High School Programming Contest.

Quanta Robotics · Co-Founder & Robotics Programmer

📅 Jan 2020 – Dec 2023

A robotics team I co-founded at university, which built humanoid robots.

- Worked on every part of its main robot, Robot Niko: the 3D printing, the assembly, the servo tuning, the arm motions and the software (see Projects).
- Niko was launched at the Deputy Commissioner's Office in December 2022 and covered by the national press, among them Kaler Kantho, The Daily Post and BTv.

PROJECTS

- **OrbiBot** (2025 – present). A mecanum-wheel robot I built myself, from the welded steel frame and electronics to the software. Its next version is designed in Python-scripted CAD and tested in MuJoCo simulation.
 - Maps a room and navigates on its own: LiDAR SLAM, Nav2 path planning, and an EKF that fuses wheel and IMU data, on ROS 2.
 - Takes commands from an AI agent through an MCP server, so Claude, Gemini or a local model can drive it.
 - Runs on my own STM32 motor firmware with PID control and a safety stop, with a React dashboard for live video and driving over WebRTC.
- **Robot Niko** (2022 – 2023). A life-size, 3D-printed humanoid assistant in the InMoov design, built with the team at Quanta Robotics, on a Raspberry Pi.
 - 3D-printed and assembled its body, tuned its 27 servos on two PCA9685 boards, and planned its arm motions as servo sequences.
 - Led its programming and wrote most of its Python code: a "Hey Niko" wake word, spoken conversation, and face recognition that greets each person by name with a handshake, while its head turns to follow a face (OpenCV).
- **EnviroBot** (2024). My final-year project: a rover that finds waste with a camera, tells paper, plastic, metal and general waste apart (YOLOv8), and picks it up with its robot arm, using Arduino control and a ROS 2 model of the arm (URDF, Gazebo, RViz).
- **Sign Language Detection** (2023). Reads American Sign Language hand signs from a camera and turns them into letters, using MediaPipe hand tracking and a PyTorch CNN; written up as a team project report.

SKILLS

AI engineering:	AI agents, MCP servers, LLM tool calling, RAG (retrieval-augmented generation), structured outputs, guardrails with human approval, evals, prompt design; Claude, Gemini, Ollama, MCP SDK, Vercel AI SDK, LiteLLM
AI-assisted development:	Claude Code (skills, subagents, headless runs), Codex, Cursor, spec-driven development, AI code review
Backend:	C#, .NET, ASP.NET Core, CQRS, message-driven sagas, RabbitMQ, MongoDB, PostgreSQL, Node.js
Web:	TypeScript, React, Next.js, Angular, NgRx, Supabase, Tailwind
Robotics and vision:	ROS 2, Nav2, SLAM, MoveIt, URDF, RViz, Gazebo, MuJoCo, OpenCV, MediaPipe, PyTorch
Embedded and hardware:	STM32, ESP32, Arduino, Raspberry Pi, KiCad, FreeCAD (Python-scripted), LiFePO4 power
Programming and tools:	C#, Python, TypeScript, JavaScript, C++, SQL; testing with NUnit, pytest, Vitest, Playwright and pgTAP; Git, Linux, Docker
Spoken languages:	Bangla (native), English (professional)

EDUCATION

Comilla University · B.Sc. Engineering, Information and Communication Technology

📅 2019 – 2024 · CGPA 3.43 / 4

ACHIEVEMENTS

- Mujib 100 Idea Contest (ICT Ministry, national): our team was selected in the top 100, then the top 30, for a smart dustbin that sorts waste with image classification on a Raspberry Pi.
- Runner-up, Line Follower Robot contest, BAIUST EEE Day 2023 (team CoU Bots).
- Codeforces Specialist (max rating 1509); 1,200+ problems solved (handle CodeCell).