MD. YEASIN ARAFAT

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ABOUT ME

I'm a fourth-year Computer Science and Engineering student at North South University. I build AI/ML models for computer vision, OCR and Bangla language work, along with the web apps that put them in front of people. I co-authored an IEEE IS'26 paper on Bangla LLMs, and I'm looking for AI/ML or full stack software engineering roles.

EDUCATION

North South University — **B.Sc. in Computer Science and Engineering**
Jan 2022 - Present — Expected graduation: April 2027

Bangladesh Navy School & College — **Higher Secondary Certificate (HSC)**
2018 - 2020 — GPA 5.00 (Scale of 5.00) from Science

Model Academy — **Secondary School Certificate (SSC)**
2018 — GPA 5.00 (Scale of 5.00) from Science

SKILLS

Programming: Python, JavaScript, TypeScript, C, C++, Java, SQL
AI/ML: PyTorch, TensorFlow, Hugging Face Transformers, QLoRA/LoRA, OpenCV, FAISS, NumPy, Pandas
Web & Tools: FastAPI, Django REST Framework, React, Next.js, Tailwind CSS, PostgreSQL, MongoDB, Docker, Git
Software: GitHub Actions, Linux, Jupyter, Postman, Hugging Face Spaces, FFmpeg, Blender, PlatformIO, Claude Code, OpenAI Codex, Gemini CLI
Language: Bengali (native), English (professional working proficiency)

RESEARCH EXPERIENCE

BhashaLLM (Capstone Researcher, North South University)
GitHub (2025 - 2026)

- Benchmarked 9 open LLMs (1.5B to 12B) on Bangla translation, summarization and OCR correction, all on one 16 GB GPU with 4-bit quantization.
- Built a blind human-rating rubric for accuracy, script and naturalness; small models mixed Devanagari into Bangla in up to 23% of answers.
- Fine-tuned a Qwen-VL OCR model with QLoRA on our 1,500+ page handwritten Bangla dataset, cutting character error rate from 28% to 12%.

Image Forensics (Undergraduate Researcher, North South University)
GitHub (2026)

- Curated a 9,611-image inpainting forgery dataset with pixel-level masks and benchmarked 12 segmentation models on it.
- Added noise and frequency streams with edge-aware supervision to a ConvNeXt-L U-Net, raising IoU from 0.849 to 0.874 (93.29% Dice).

PROJECTS

AI/ML & Computer Vision

Fabric Defect Detection (NumPy, PyTorch, Streamlit) — GitHub | Live demo (2025 - 2026)
- Wrote gradient boosting from scratch in NumPy and classified 7 defect types at 93.25% test accuracy (0.99 macro AUC).

Reviva (FastAPI, GFPGAN, Real-ESRGAN, React, Docker) — GitHub | Live demo (2026)
- Open-source photo and video enhancer that restores faces and upscales 2x or 4x. It keeps no files: uploads live in RAM.

LLMs, RAG & Document AI

DocuMind AI (FastAPI, FAISS, OpenAI API, Tesseract) — GitHub (2026)
- Question answering over PDFs and scans that retrieves evidence with FAISS, then marks each answer as valid, weak or hallucinated.

AI Social Contract Advisor (Next.js, Django, PostgreSQL, Gemini API) — GitHub (2025)
- Rates contract clauses as low, medium or high risk, reads noisy PDFs and scans with Tesseract OCR, and translates them into Bengali.

Full Stack Web Apps

AI E-Commerce Store (Next.js, TypeScript, MongoDB, Socket.io, GPT-4o) — GitHub (2026)
- An admin assistant turns plain-language instructions into product listings with prices, next to a real-time customer chat.

SweatFit AI (React, Django, PostgreSQL) — GitHub (2024)
- Fitness and nutrition app with workout and meal tracking, calorie APIs, JWT sign-in and a progress dashboard.

AI Agents & Developer Tools

Everything-videoEditing (Python, FFmpeg, Whisper, Remotion) — GitHub (2026)
- Agent Skill that turns Claude Code, Codex and Gemini CLI into a video editor: cuts, captions (Bangla too), color, audio, exports.

Loopify (Markdown, Shell, JavaScript) — GitHub (2026)
- Prompt skill that turns a task into a goal, a verifier and a budget, then works and checks in cycles until the verifier passes.

Embedded Systems

PLANT-X (C++, STM32, PlatformIO, I2C, ADC) — GitHub (2026)
- Offline plant monitor on an STM32 Blue Pill: soil, temperature, humidity and light sensors, alerts, and about 1,250 lines of firmware.

EXTRA CURRICULAR ACTIVITIES

NSU Computer & Engineering Club (NSUCEC) (Member)

PUBLICATION & ACHIEVEMENTS

- **Co-author of the BhashaLLM paper at IEEE IS'26, published in IEEE Xplore (DOI: 10.1109/IS71416.2026.11727246)**
- **Presented the paper at IEEE IS'26 in Varna, Bulgaria, on 3 September 2026**
- **Demoed BhashaLLM at booth 23, NSU Capstone Project Showcase, Season 19 (April 2026)**

REFERENCES

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