



Uttam Raj
Patratu, Jharkhand (India)
Computational Mathematics
Bachelor of Technology
National Institute of Technology Agartala

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EDUCATION

- National Institute of Technology Agartala** 2023 - 2027
Bachelor of Technology in Computational Mathematics : Agartala, Tripura CGPA: 9.27

TECHNICAL PROJECTS

- Custom Unix Shell** [↗](#) *C, Linux System Programming, POSIX*
Implemented a Unix-like shell from scratch with essential features
 - Constructed core shell functionalities such as **command execution**, **I/O redirection**, **piping**, and 5+ built-in commands ('cd', 'pwd', 'echo', etc.)
 - Extended support for **chained execution** and multi-stage pipelines across 30+ external commands including 'ls', 'cat', 'ps'
 - Utilized 'dup2' for safe and efficient file descriptor manipulation to handle input/output redirection
 - Maintained clean and modular code conforming to POSIX standards.
- Gist: AI-Powered Blogging Platform** [↗](#) *React, TypeScript, Python, LangChain, RAG, Hono*
A full-stack blogging platform featuring AI-assisted content interaction
 - Incorporated AI-driven summarization via LangChain, decreasing average read time by **40%** (6 min to 3.5 min)
 - Developed a chatbot using Retrieval-Augmented Generation (RAG), boosting average session length by **25 minutes**
 - Improved readability via Markdown and syntax highlighting; **92% of testers** reported better content clarity
- MindCare: Mental Health Assessment Platform** [↗](#) *Next.js, TypeScript, Firebase, React*
Mental health platform with assessment tools and progress tracking
 - Created a mental wellness platform featuring quiz-based assessments and progress monitoring; tested by 10+ users
 - Integrated AI-generated feedback using LLMs, providing personalized recommendations consumed in **85% of sessions**
 - Rolled out an AI-powered chat assistant that increased user session time from 4 to **11 minutes** on average

TECHNICAL SKILLS

Programming Languages: JavaScript/TypeScript, Python, C++, C
Web Development: React, Next.js, Node.js, Express.js, HTML/CSS, Hono, REST APIs
Databases: PostgreSQL, Firebase, Redis
Tools: Docker, Git, VS Code, Neovim, Linux, GDB
Computer Science: Data Structures & Algorithms, Object-Oriented Programming, Operating Systems
Areas of Interest: Competitive Programming, Technical Writing, Open Source Contribution

ACHIEVEMENTS

- Grand Finalist** in National-level Arjuna Hackathon by CITC, NIT Agartala (2024)
- Ranked** in top **5,000 teams** out of **25,000** participants in Build With India Hackathon
- Codeforces** : Pupil with maximum rating of 1237 and 500+ problems solved [↗](#)
- LeetCode** : Rating of 1596 (top 23% globally) with 200+ problems solved [↗](#)
- CodeChef** : 2 star with max rating of 1460 [↗](#)
- Finalist** in Game of Codes competitive programming contest at NIT Agartala

CERTIFICATIONS

- 100xDevs Full Stack Web Development Program [↗](#) - Completed intensive curriculum on modern web development
- Arjuna Hackathon Finalist Certificate [↗](#)
- ITAC Pravah Hackathon Participation Certificate [↗](#)
- Build With India Hackathon Certificate [↗](#)

POSITIONS OF RESPONSIBILITY

- Technical Member, Developer & Coder's Club (DCC), NIT Agartala** Aug 2024 - Present
 - Led a team of 5 developers in creating responsive websites for college events, serving 1,000+ attendees
 - Mentored junior team members in modern web development practices and version control