

Gyan Ranjan

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Objective

Enthusiastic Computer Science and Data Analytics 3rd year student at IIT Patna, with a passion for machine learning, AI, and quantum computing. Eager to contribute to innovative projects while continuing to learn and grow in the tech industry.

Education

Indian Institute of Technology, Patna, Bachelor of Science in Computer Science and Data Analysis (ongoing)

July 2023 – June 2026

- CGPA: 8.40/10.0
- **Coursework:** Data Structures and Algorithms, Machine Learning & Artificial Intelligence, Linear Algebra & Probability, Data Analytics and Visualization

Projects

Password Cracker

[Project-Link](#)

- Developed a comprehensive password cracking application featuring brute force and dictionary attacks
- Implemented hash cracking capabilities for MD5, SHA1, SHA256, and SHA512 with customizable character sets
- Created a responsive UI with real-time progress tracking, testing tools, and comprehensive documentation
- Tools Used: Python, Tkinter, Hashlib, PIL, Cybersecurity concepts

Virtual Mouse with In-built Voice Assistant

[Project-Link](#)

- Developed a virtual mouse that allows users to control the cursor using hand gestures and voice commands
- Used Python's OpenCV library for real-time gesture recognition and integrated speech recognition for voice commands
- Enhanced understanding of computer vision and natural language processing, providing a hands-free experience for users
- Tools Used: Python, OpenCV, Speech Recognition API

Prompt-to-3D

[Project-Link](#)

- Built a Blender add-on that creates 3D models from simple text prompts, like "create a red car," making 3D design accessible for beginners and non-technical users.
- Integrated natural language processing (NLP) using Ollama's Mistral model with Blender's Python API and a Flask backend to translate user inputs into 3D models.
- Developed a user-friendly command-line interface (CLI) to streamline interaction within Blender's environment.
- Secured 7th rank among 60 teams in a 24-hour hackathon at IIT Patna, showcasing innovation and teamwork.
- Strengthened skills in Python programming, NLP, 3D modeling automation, and backend development.
- **Tools Used:** Python, Blender Python API, Flask, Ollama Mistral, Git.

Mosquito Exterminator Game

[Project-Link](#)

- Build an interactive game in python where players kills mosquitoes, featuring a completed game loop and visual feedback.
- Using Python for game logic and HTML for supplementary elements, demonstrate creativity and programming skills.
- Enhanced skills in game development, Python programming, and integrating multimedia components.
- Tools used: Python, HTML, OpenCV, Mediapipe, Git

Open-Source Contributions

St. Jude's Research Hospital – WDL

- Wrote a Rust rule (*DisallowedDeclarationName*) to avoid repetitive variables names, making code cleaner and faster ([PR #343](#))
- Added YAML support to the wdl-engine for better workflow compatibility([PR #352](#))
- Created DEFINATIONS.md to simplify WDL documentation for new contributors ([PR#373](#))
- Fixed error message handling in gauntlet for consistent reporting across platforms ([PR #391](#))
- Tools used: Rust, YAML, Git, Markdown, GitHub

Qiskit – IBM's Quantum Computing Framewrok

- Updated import statements for *general_preset_pass_manager* function following the 1.3.3 release ([PR #2797](#))
- Remove REPL (>>>) from code examples to improve documentation readability ([PR #2698](#))
- Organized guide images in the documentation repository for better structure ([PR #2939](#))

Technical Skills

Languages/Database: Python, Rust, C++, SQL, MongoDB

Frameworks/Libraries: React, Node.js, FastAPI, Ollama,

Web Technologies: HTML, CSS, JavaScript, Git, GitHub Actions

Software & Tools: Visual Studio Code, PyCharm, Jupyter Notebooks, Excel, Power BI

Languages

English: Fluent

Hindi: Fluent

Japanese: Beginner

Extracurricular Activities

- Sub-coordinator, Event Management – IIT Patna's Exiler Fest 2024 Volunteer
- Coding Club – Helped organize coding bootcamps for peers
- Hack N Tech – Leded a Team (Team 7) for 24 hour live hackethon at IIT Patna, got 7th rank out of 60 teams