Bidhan Manna

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LinkedIn | GitHub

EDUCATION

Vellore Institute of Technology   Aug 2022 - May 2026

Bachelor of Technology, Major in Computer Science and Engineering   **Cumulative GPA: 7.77**

TECHNOLOGIES AND TOOLS

- **Languages:** Java, C, Python, HTML/CSS, SQL.
- **Tools/Cloud:** Git, Github, MS Excel, Figma, AWS.
- **Framework:** Flutter, Android Development, REST API, DBMS
- **Databases:** MongoDB, MySQL.
- **Game Engine:** Unity 3D.

CERTIFICATIONS

- Java Foundation Associate, Oracle Corporation (Aug 04, 2025)
- Cyber Security Analyst, IBM Career Development Program (May 22, 2025)
- Intro to AR/VR/MR/XR: Technologies, Applications & Issues, University of Michigan, Coursera (Dec 24, 2023)
- Introduction to Cloud Computing, Simplilearn by SkillUp (27 Apr, 2025)

WORK EXPERIENCE

Indian Space Lab (ISL) – *Remote*   Dec 2023 – Jan 2024

Intern

- Modified code for flight controller systems and mission-planning tools, enhancing UAV test-flight stability and navigation accuracy by nearly 30% through iterative testing and thorough parameter optimization.
- Improved remote sensing data quality by identifying and resolving a critical sensor calibration error, which affected all data and improved analysis accuracy by 35-40%.
- Enhanced CubeSat module sensor calibration processes, leading to a 15% improvement in data accuracy and an 8% reduction in data noise during critical environmental testing procedures.

PROJECTS

AI-Powered Quiz Generator   GitHub Repo

Java, Python

- Developed Java Spring Boot application that accepts PDF inputs and generates quizzes via integrated Python ML pipeline.
- Implemented PDF-to-image conversion using PyPDF2 and text extraction with Granite 3.2
- Created summary generation using Hugging Face transformers and question generation with NLP techniques .
- Containerized system with Docker achieving 90% question relevance accuracy.

Procedural Dungeon Generator   GitHub Repo

Python

- Design a multi-staged hybrid procedural dungeon generator integrating rectangular rooms, handcrafted prefabs, and BFS cave expansion, achieving 100% connectivity across 100 test runs.
- Implemented evaluation metrics and visualization tools (CSV analytics, plots, and animated GIF/MP4 generation) to quantify path length ($\tilde{4}5$ tiles) and rooms diversity (prefabs 20%, caves 30%).
- Developed an interactive Jupyter Notebook demo with sliders and dropdowns enabling real-time control of dungeon parameters and generations stages for research and experimentation.

Pose2Avatar   GitHub Repo

Python

- Built Pose2Avatar, an AI pipeline that converts human pose keypoints into real-time 3D/2D character animation using pose estimation and motion transfer techniques.
- Designed a modular system supporting motion smoothing, interpolation, and avatar rigging for integration with game engines and VR/AR workflows.
- Extended the framework toward motion-guided procedural generation, enabling adaptive character and environment behavior for immersive applications.

CO-CURRICULARS

- **Lead of Social Media Team VRGC :** VIT Bhopal University July 2023 – Ongoing.
- Cyber-Security Awareness Program – Completed a 5-day training by TheCyberDelta, Hackersvilla & GeeksForGeeks, covering cyber threats and security best practices.
- **Hobbies:** Tech Trendy, Gaming, Cooking, Trained in classical Singing and guitar, Photography
- **Languages:** Bengali, English, Hindi