

ANSHUMAN SAMANTA

Durgapur, India

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EDUCATION

Central University of Jharkhand

Integrated B.Tech-M.Tech - Computer Science and Engineering - CGPA - 9.14/10

Oct 2022 – Present

Ranchi, India

DAV Model School, Durgapur

Higher Secondary Education - Percentage - 92%

Apr 2020 – Jun 2022

Durgapur, India

EXPERIENCE

NIT Rourkela Winter Intern

Role - Research Intern

Dec 2024 - Feb 2025

Rourkela, India

- Developed Conditional GAN (CGAN) model for image synthesis and foreground extraction (80 % accuracy).
- Collaborated in a 4-member team to implement image matting and high-quality image synthesis using Conditional GANs, Super-Resolution GANs, and MODNet.
- Leveraged MOD-Net for precise alpha predictions and feature indexing in image matting.
- Utilized Conditional GAN and StyleGAN for background replacement and synthesis, and Super-Resolution GAN for image quality enhancement.
- Validated image matting results using Structural Similarity Index (SSIM).
- Analyzed GAN-generated image quality using Inception Score (IS) for potential applications in VR and film.
- High-Quality Image Synthesis | GAN, Image Segmentation

PROJECTS

NASA Space Apps Hackathon (Finalist) | Node.js, MongoDB, Express.js, HTML, CSS

- Developed **GlobeQuest** an interactive educational platform for environmental science using Node.js, MongoDB, Express.js, HTML, and CSS. **Web Link**
- Utilized Express.js for middleware setup, HTTP request handling, routing, and static file serving.
- Integrated real-time data collection and stored data in MongoDB to create a dynamic leaderboard system.
- Implemented multiplayer functionality to enhance user collaboration and learning.
- Deployed the application on Render for seamless frontend/backend integration.

Python Flask Backend Projects [GitHub]

- Developed a **To-Do List Web Application** with Flask and cx_Oracle, featuring CRUD operations for task management.
 - * Leveraged Flask for backend logic and API endpoints.
 - * Utilized cx_Oracle for Oracle database connection and data management.
 - * Implemented Jinja templating for dynamic HTML rendering.
 - * Ensured data persistence and real-time data manipulation.
- Engineered a **Bank Management System** using Flask and cx_Oracle, providing secure account operations and authorization. **Web Link**
 - * Implemented account operations (deposits, withdrawals, balance inquiries) using Flask.
 - * Leveraged cx_Oracle for secure Oracle database interaction and data integrity.
 - * Developed authorization features (user authentication, role-based access control).
 - * Utilized Jinja templating for user interface creation.
 - * Ensured secure CRUD operations with SQL.
- **Automated Gmail tasks** with Python, leveraging SMTP and SSL libraries for secure bulk email.
 - * Developed Python scripts to streamline email workflows.
 - * Utilized SSL for secure email transmission.
 - * Implemented bulk email functionality.

TECHNICAL SKILLS

Languages: Python, Java, C/C++, JavaScript, Bash, React.js

ML/DL: TensorFlow/Keras, OpenCV, Scikit-learn

Web: React.js, Node.js, MongoDB, Flask

Tools: Git, GitHub, Android Studio, Jupyter Notebook, Spring, Spring Boot, Spring Data JPA, Hibernate (H2)