

Sourav Mohanty

Contact Details

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Academic Details

- **Master of Technology (MTech – Executive)**
Indian Institute of Technology Patna (IIT Patna) (2024 – Present)
- **Bachelor of Technology (B. Tech) Computer Engineering**
Gandhi Institute of Technological Advancement (GITA); (2024)

Technical Skills

- **Programming Languages:**
Java, SQL, HTML, CSS, JavaScript, Python.
- **Software Tools:**
Git/GitHub, Postman, Maven, JUnit, Spring Tool Suite (STS).

Core Competencies

- **CORE JAVA:**
 - **OOP Principles & Exception Handling:** Strong understanding of Inheritance, Polymorphism, Abstraction, Encapsulation, and Exception Handling.
 - **Collections & Multithreading:** In List, Set, Map, and basic Multithreading concepts.
- **Data Structures & Algorithms:**
 - Strong knowledge of Arrays, Linked Lists, Stacks, Queues, Trees, Searching & Sorting algorithms.
- **Advanced Java:**
 - Experienced in **JDBC** for efficient database communication and management.
 - Developed web applications using **Servlets** for efficient server-side processing.
 - Proficient in **JSP** for creating dynamic web pages and integrating them with Servlets.
- **Spring & Backend Development:**
 - **Spring Core & IoC:** Dependency Injection, Bean Lifecycle, Auto-wiring.
 - Spring Boot: @SpringBootApplication, Component Scanning, Embedded Servers (Tomcat, Jetty), Application Configuration.
 - **Spring Data JPA & Hibernate:** Repositories, Query Methods, Pagination, Sorting, Connection Pooling (Hikari).
 - **Spring Web & MVC:** Dispatcher Servlet, Controllers, RESTful APIs (GET, POST, PUT, DELETE), Exception Handling.
- **SQL (STRUCTURED QUERY LANGUAGE)**
 - CRUD Operations, Joins, Subqueries, Indexing, Transactions (DDL, DML, TCL, DCL, DQL), RDBMS.

Work Experience(Internships)

Research And Development Intern
Indian Space Research Organization-Ahmedabad **Oct 2023 - Dec 2023**
Responsibilities:

- Migrated from Arduino to Raspberry Pi using Python on Linux, improving mission efficiency and satellite functionalities by 30% through advanced data processing and real-time monitoring capabilities.
- Collaborated effectively with senior scientists and engineers to analyze satellite data, enhancing Earth observation data accuracy.
- Developed and optimized algorithms for real-time satellite data processing, improving the system's responsiveness and overall performance.

Front-End Developer Intern
Tech-Octa-Net Services Pvt Ltd- Bhubaneswar **Aug 2023 - Oct 2023**
Responsibilities:

- Enhanced website performance by 10% through optimized code in HTML, CSS, and JavaScript.
- Developed backend functionalities using Java (JDBC & Servlets) for seamless integration.
- Improved frontend-backend communication for better data handling.
- Demonstrated leadership, teamwork, and problem-solving skills.

Teaching Assistant Intern
Coding Ninjas **Nov 2022- Jan 2023**
Responsibilities:

- Assisted 60+ students in learning Java and Data Structures.
- Took doubt sessions and resolved more than 300 doubts with an average rating of 4.1.
- Debugged codes and helped students with their assignments and problems.
- Mentored students in Java & Data Structures, strengthening their problem-solving skills.

Projects

Estimation and Movement Tracking of Low Cloud/Fog Over India at Night Using INSAT-3DR Satellite Data

- **Tech Stack Used:** Python, NumPy, Pandas, Matplotlib, Seaborn, h5py, SciPy, and PIL/Pillow, utilizing INSAT 3DR satellite data and geospatial shapefiles.
- This project detects and tracks nighttime fog over India using INSAT-3DR satellite data, focusing on infrared channels to monitor fog movement.
- Processed Mid Infrared (MIR) and Thermal Infrared (TIR) data to calculate Brightness Temperature Difference (BTD), isolating fog regions, which were then visualized using Matplotlib.

Smart City Waste Management Portal

- Developed a Smart City Waste Management Portal using Java, Servlets, JSP, JDBC, and MySQL.
- Implemented a user-friendly reporting module for residents to report waste issues along with location data.
- Implemented role-based access control, providing distinct interfaces for residents and city officials.
- Resolved complex technical challenges in database connectivity and input validation to ensure scalability and reliability.
- Improved accessibility with a responsive design, ensuring seamless access across devices.