Gaurav Pal
Research Software Engineer

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Profile

Experienced and dedicated professional with a background in Electronics and Communication and specialization in Microelectronics and VLSI. Over 4 years of combined experience as a Training and Placement Officer at Techno India University and as a Research Software Engineer at IIIT Hyderabad's Smart City Research Center. Proven track record in software design, IoT interoperability, data visualization, and digital twin development. Skilled in Python, data analytics, and cloud engineering. Recognized for contributions to smart city systems and IoT architectures with multiple publications and awards.

Areas of Expertise

Smart City Systems - IoT and Sensor Networks - Data Visualization and Analytics - Software Development - Data Analysis - Database Management - Machine Learning and Data Science - Project Management - Technical Training and Mentorship

Professional Experience

Research Software Engineer, *(Smart City Research Center)*   **Hyderabad, Telangana** *01/2023 - present*

- Developed software applications to interface with the OneM2M IoT interoperability server.
- Implemented Data Lake for sensor nodes, enabling efficient data storage and retrieval.
- Deployed IUDX-RS (Indian Urban Data Exchange-Resource Server) for smart city data integration.
- Conducted data visualization and analytics to provide actionable insights from sensor data.
- Developed digital twins for smart city systems, enhancing monitoring and simulation capabilities.
- Contributed to the design and architecture of the Smart City Living Lab.

Training and Placement Officer, *(Techno India University)*   **West Bengal** *02/2019 - 05/2022*

- Coordinated training and placement activities, successfully placing students in reputable companies
- Developed and implemented strategies to improve students' employability and industry readiness.
- Organized workshops, seminars, and guest lectures to enhance students' technical skills and industry knowledge.
- Mentored and guided students in their academic and career planning.
- Collaborated with industry professionals to build and maintain relationships with potential recruiters.
- Managed and updated the university's placement database and records.
- Facilitated internships and industrial training programs for students to gain hands-on experience.

Online Courses & Certifications

- Post Graduate Certificate in Software Engineering for Data Science, Jointly by IIIT Hyderabad and Great Learning (Oct 2021 – Sept 2022) - IIITH-SEDS

- Programming in Python From National Institute OF Electronics Information Technology (Aug 2021- Sep 2021) - LinkedIn

Education

M.Tech, Electronics and Communication Engineering specialization in Microelectronics and VLSI *M.A.K.A.U.T*
West Bengal *2016-2018*

B.Tech, Electronics and Communication Engineering *M.A.K.A.U.T*   **West Bengal** *2011-2015*

Skills

- **Programming Languages:** Python, JavaScript, SQL, Excel

- **Frameworks and Tools:** Flask, Docker, PySpark, SparkSQL

- **Database Management:** MySQL, MongoDB, Data Lakes

- **IoT and Embedded Systems:** oneM2M, Digital Twin for water utility network

- **Data Analysis and Visualization:** NumPy, Pandas, EDA using Python

- **Software Development:** Object-Oriented Programming, API Development

- **Machine Learning and Data Science:** MLflow, Supervised Classification Algorithms, PCA, LDA

- **Project Management:** End-to-end project lifecycle management

Languages

- **English**
- **Hindi**

- **Bengali** [Native]

Publications and Acivements

- **Scalable and Interoperable Distributed Architecture for IoT in Smart Cities.**WF-IoT-2023

- **Exploratory Study of oneM2M-based Interoperability Architectures for IoT: A Smart City Perspective.**ICSA-2024

- **Architecting Digital Twin for Smart City Systems:A Case Study.**ICSA-2024

- **Acivements:** Joint recipient of Best User App Prize in 2023 International oneM2M Hackathon organized by Korea Electronics Technology Institute and European Telecommunications Standards Institute.