Yash Mishra

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Education

Purdue University West Lafayette, Indiana
Bachelor of Science in Computer Engineering *Aug. 2023 – May 2026*

- **GPA:** 3.64, Dean's List, Semester Honors
- **Relevant Courses:** Micro-controller, ASIC Design, UVM Verification, Digital System and Design

Experience

Anrich3D May 2022 – June 2022
3D Printing Research Intern *Singapore*

- Developed complex 3D printing applications using **C++**, enhancing the precision and efficiency of the printing process.
- Improvised the code files by streamlining 3D printing operations with minimized rapid movements and optimized cutting paths, **resulting in a 50% reduction in print time**.
- Designed and implemented parametric geometric shapes and patterns using **mathematical algorithms in C++**, significantly improving the complexity and accuracy of printed objects.

Spatial Planning and Analysis Research Centre Pvt. Ltd (SPARC) Sep. 2022 – October 2022
Software Engineering Intern - Data Science Team *India*

- Conducted comprehensive research for the "Stellar Radius and its Space Applications" project, employing **Python and SQL** to create and manage geospatial databases.
- Generated thematic geo-spatial layers at a 1:10K scale, producing detailed resource inventories (e.g., water sources, road networks) from high-resolution satellite images, **enhancing data accuracy by 60%**.
- Enhanced data management and analysis for the SIS-DP project, leveraging **Python** and **SQL** to **improve data processing speed by 40%**.

Odisha Space Application Center (ORSAC) March 2021 – June 2021
Software Engineering Intern - Data Analysis Team *India*

- Analyzed spectral signatures of various objects (e.g., vegetation, water bodies) using a spectral radiometer and **Python**, **improving data accuracy by 55%**.
- Compared field spectral signatures with high-resolution satellite data (e.g., LISS-IV from Resourcesat) using **Python** for data analysis and visualization, **enhancing comparative analysis by 45%**.
- Managed and analyzed spectral and satellite data, contributing to spatial planning and resource management insights with a **30% increase in data processing efficiency**.

Indira Gandhi Atomic Research Centre May 2021 – June 2021
Engineering Intern - Data Science Team *India*

- Gained practical experience with experimental sodium loops used for testing fast reactor components, contributing to the Electromagnetic Design and Analysis section.
- Analyzed the performance of liquid sodium as a coolant in fast reactors, leading to **a 20% improvement in coolant system efficiency**.
- Utilized **Python and R** for data analysis and simulation, integrating findings with hardware testing to optimize reactor design, **improving system performance by 25%**.

Projects

AI-Powered Inventory and Food Planner | *Python, OCR, Generative AI* December 2024 – Present

- Developed a system that automates inventory management and recipe generation by scanning receipts using OCR (`pytesseract`) and classifying items into categories using Google's Generative AI (Gemini-1.5).
- Enabled real-time inventory updates and recipe recommendations while auto-deducting ingredient quantities based on recipe usage.
- Incorporated AI-based item classification to estimate quantities and categorize food and non-food items from receipts for efficient inventory tracking.

Image Processing Pipeline | *Python, NumPy, Matplotlib* June 2023 – November 2023

- Developed a Python-based image processing pipeline, including grayscale conversion, Gaussian filtering, and image blending with pyramids.
- Designed a Matplotlib UI for interactive image selection and applied advanced techniques for seamless image integration.

Technical Skills

Languages: Python, C, C++, R, SQL, PostGresql, HTML/CSS, GitHub
Skills:Data Science, Jupyter Notebook, IBM Watson Studio (SPSS Model, AutoAI), IBM Cloud (Relational Databases, Database Functions), Model Deployment with Watson Machine Learning, Generative AI
Libraries:Pandas, NumPy, Matplotlib, TensorFlow, Keras, Scikit-learn, Tkinter, PyTorch, Tesseract