

Mrinal Raj

Portfolio: Mrinal.web

Github: Mrinal98-py

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PROFESSIONAL EXPERIENCE

- **CSIR- National Aerospace Laboratories (NAL)** Bengaluru, India
Project Intern Sept 2024 - Oct 2024
 - Thresholding and morphological operations to post-process and clean machine learning-generated images, removing noise and enhancing critical features. Touch inpainting techniques, I filled in missing regions, significantly refining meta atom structure masks. This improved both image quality and data interpretation accuracy.
 - I utilized a suite of image processing and computer vision tools, including OpenCV, NumPy, Matplotlib, PIL, Imageio, Scipy, and Scikit-image. These tools allowed for efficient filtering, morphological operations, and data visualization, enabling precise image manipulation and leading to more accurate and insightful data interpretation.
- **Kalinga Institute of Industrial Technology(KIIT)** Bhubnashwar, India
Project Member Jan 2024 — July 2024
 - Developed a lightweight, customized CNN model for automated brain tumor classification using MRI scans, achieving 99.89% training accuracy and 96.74% validation accuracy, outperforming DenseNet121 and ResNet50 in terms of efficiency and accuracy
 - Integrated MRI datasets from Figshare, SARTAJ, and Br35H to enhance generalization, employing advanced image preprocessing, ReLU activation, log-softmax, and machine learning classifiers to achieve a precision of 98.72% and F1 score of 99.34%.
- **TechBairn** Remote
Operations Team Member Mar 2023 — July 2023
 - Assisted in coordinating and managing daily operations to ensure smooth workflow with clients.
 - Supported the execution of services for over 150 clients, contributing to their successful completion

PROJECTS

- **Mail Sage (Python, Data Collection, Data processing, MongoDB):** Developed a Python-based script for continuous data collection and processing, designed to fetch emails, scrape their content, and store the data in MongoDB. The script intelligently categorizes emails based on user-defined preferences and connects the data to a web page for real-time display. The tech stack includes Python for scripting, BeautifulSoup for scraping, MongoDB for data storage, and a web framework for frontend integration, ensuring efficient and scalable email management.
- **Telegram Bot (Python, API):** Telegram bot leveraging Llama 2 language model for intelligent document processing. Engineered asynchronous PDF extraction pipeline with PyPDF2, integrated REST API endpoints for AI inference, and implemented stateful conversation handling for sophisticated document Q&A functionality.
- **Retail Manager (Python, Tkinter, MySQL):** Developed a user-friendly, GUI-based software system for a retail electronics shop, enabling secure administrative and customer functionalities. Implemented dynamic data storage, updating, and deletion, ensuring secure admin access and an interactive, real-time experience for customers.

TECHNICAL SKILLS

- **Languages:** Python, C++,C, SQL
- **Libraries:** Pandas, NumPy, Matplotlib, Keras, Tensorflow, OpenCV, Scikit-Learn, Pytorch, Flask
- **Additional Skills:** GIT, Github, Linux/Unix, VsCode, Jupyter notebook
- **Coursework:** Data Structures and Algorithms, Database Management Systems, Machine Learning, Data Mining

EDUCATION

- **Kalinga Institute of Industrial Technology** Bhubaneshwar, India
B.Tech, Computer Science and Engineering (CGPA:7.77) 2021-2025
- **Ganga International School** Delhi, India
XII, CBSE (83.83%) 2021

CERTIFICATIONS

- **Cisco:** CCNA, PCPA, Cybersecurity Essentials
- **Hacker Rank:** Problem Solving Basic & Intermediate
- **UdmeY:** Introduction to Cloud Computing on AWS for Beginners [2024]

ACHEIVEMENTS

- **Silver Zone Foundation(Computer Sc.):**
Secured 168th Olympiad & 34th State rank.
- **Silver Zone Olympiad(International Olympiad of English Language)**
Secured 302th State rank.