Shruti Nigam

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Final-year BTech student in Computer Science and Engineering (AI & ML) with a strong focus on machine learning, deep learning, and data-driven problem-solving. Experienced in conducting interdisciplinary research, including an internship at ISRO's UR Rao Satellite Centre, where I worked with spacecraft telemetry data. Eager to contribute to impactful research in machine learning and its applications in sustainability.

EDUCATION

Dayananda Sagar University — *Bangalore, Karnataka*　　　　　　　　　　　　　　　　　　　Oct 2021 - May 2025
- Bachelor of Technology in Computer Science and Engineering (AI & ML)
- First Class with Distinction (GPA: 7.85)
- Relevant Coursework: Deep Learning and Computer Vision, Natural Language Models, Advanced Data Science, Machine Learning, Cloud Computing, Artificial Intelligence, Introduction to Space Technologies, Explainable Artificial Intelligence, Advanced Deep Learning, Operations Management

EXPERIENCE

Intern, *URSC (UR Rao Satellite Centre), ISRO (Indian Space Research Organization)*　　　　Jul 2024 - Aug 2024
- Title: "Analysis of Archived Spacecraft Telemetry Data"
- Interned in the Mission Data Processing Lab associated with the Spacecraft Mission Checkout and Software Group
- Developed an interactive GUI using Qt Creator and C++ to analyze and visualize spacecraft telemetry data, optimizing usability for researchers
- Extracted day-to-day spacecraft telemetry datasets
- Skills: C++, Qt, Linux, GUI Development, Spacecraft Telemetry, Data Analysis

ACADEMIC PROJECTS

Earth Observation Using Machine Learning *[Machine Learning and Data Science]*
- Tools: Python, Machine Learning, Satellite Data Analysis, Scikit-learn, Matplotlib, Linear Regression, Decision Trees, Random Forest
- Description: Researched and compared different models for weather prediction for various cities by leveraging real-time satellite data. Used evaluation metrics including MAE, MSE, Variance score and R2-score.

Programming Assistance Chatbot with Neural Networks and NLP *[Natural Language Processing and Artificial Intelligence]*
- Tools: Python, C, Artificial Intelligence, Natural Language Processing, Machine Learning, Deep Learning, PyTorch, NLTK
- Description: Led the development of an AI chatbot that aids in answering C programming-related queries, using PyTorch for neural network training with ReLU and optimizer adjustments for effective error handling.

Transfer Learning for Brain Tumor Detection *[Computer Vision and Medical Imaging]*
- Tools: Python, TensorFlow, Keras, OpenCV, ONNX, Deep Learning, Convolutional Neural Networks, Transfer Learning, Hyperparameter Tuning, Data Augmentation, Image Processing
- Description: Utilized transfer learning techniques with models like ResNet50V2, VGG19, and VGG16 to detect brain tumors in MRI Scans. Implemented hyperparameter tuning, data augmentation, and model conversion to ONNX format for improved inference.

SKILLS

- **Technical Skills**
  - ➔ Programming Languages: Python, C, C++
  - ➔ Machine Learning: Pandas, NumPy, Matplotlib, Scikit-learn, Data Analysis
  - ➔ Deep Learning: TensorFlow, Keras, PyTorch
  - ➔ Image Processing: OpenCV
  - ➔ Natural Language Processing: NLTK
  - ➔ OS: Windows, Linux
  - ➔ Software Development: Qt Creator and Designer, GUI Development
- **Soft Skills**
  - ➔ Leadership and Team Collaboration
  - ➔ Research Initiative
  - ➔ Extempore
  - ➔ Public Speaking

CERTIFICATIONS

- The Complete Machine Learning Course, Udemy
- JavaServer Pages Complete Certification Training, Udemy
- CSS (Basic) Skill Certification, HackerRank
- An Overview of Space Science, IIRS-ISRO Outreach Program
- AI/ML for Geodata Analysis, IIRS-ISRO Outreach Program

RECOGNITION

- Selected Attendee, Quantum Research Park (QuRP) @ IISc: Quantum Technology Workshop (2024)
- Tutor, Probability and Statistics, Dayananda Sagar University (2024)
- Selected Participant, Mathematics Conference (Wavelets, Number Theory, Engineering Math), Dayananda Sagar University (2021)