SUSANTA BAIDYA

MSc Artificial Intelligence and Machine Learning, IIIT Lucknow
+91-8837403472 susantabaidya20133@gmail.com
linkedin.com/in/susanta-baidya-03436628a github.com/Susanta2102 Portfolio kaggle.com/susanta21

PROFESSIONAL SUMMARY

MSc AI & ML graduate from IIIT Lucknow with strong expertise in Python, Computer Vision, NLP, and Deep Learning. Proven track record in developing and deploying impactful AI solutions.

EDUCATION

MSc (IT) - Artificial Intelligence & Machine Learning 2023–2025
Indian Institute of Information Technology, Lucknow *CGPA: 8.20/10*

BSc (Honours) - Statistics 2020–2023
Maharaja Bir Bikram College, Agartala *72%*

EXPERIENCE

AI/ML Intern Apr 2025–Present
DeepMatrix *Bengaluru*

- Developed optimized pipelines for object detection and defect detection using YOLO, implementing custom algorithms for Adani grading ring object detection that improved inference speed by 35%.
- Implemented various detection algorithms for manufacturing defect identification, creating streamlined training workflows that increased detection accuracy by 28% and reduced false positives by 45%.

Data Science Intern Sep 2024–Mar 2025
Climate Resilience Observatory (CRO), UP Government *Lucknow*

- Developed thunderstorm prediction system for Uttar Pradesh using bidirectional LSTM, achieving 69% accuracy and 0.74 AUC with 12-hour lead time by integrating multiple meteorological data sources .
- Developed Flask-based web interface with real-time lightning tracking and geospatial visualizations, creating risk dashboards and automated ETL pipelines that improved emergency response efficiency by 40%.

PROJECTS

Spacer Defect Detection System YOLOv5, Python, Flask
github.com/Susanta2102/Spacer-Defect-Detection-Using-YOLOv5 *2025*

- Implemented YOLOv5 with transfer learning for detecting 23 defect classes, achieving 0.56 mAP@0.5 after expanding dataset to 150,000+ images through augmentation.
- Developed Flask-based API with interactive UI for real-time defect detection, visualization, and CSV export for integration with quality control systems.

RAG-Based Semantic Quote Retrieval System Sentence Transformers, FAISS, Streamlit, Python
github.com/Susanta2102/RAG-Based-Semantic-Quote-Retrieval-System *2025*

- Built complete RAG pipeline with semantic search using Sentence Transformers and FAISS vector indexing, processing 2,507+ quotes from 872+ authors with 100% query success rate and sub-second response times.
- Developed Streamlit web interface with natural language search, author/tag filtering, and JSON export functionality, achieving 99.6% tag coverage and professional-grade search relevance.

Security Policy Compliance Automation BERT, GPT, SBERT, Python, NLP
github.com/Susanta2102/NLP-GROUP-PROJECT *2024*

- Fine-tuned BERT, GPT, and SBERT models on custom datasets (OPP-115, PrivaSeer, GDPR excerpts) for security policy extraction and compliance checking with 89% accuracy.
- Reduced manual compliance assessment time by 75% through transformer-based implementations, optimizing for F1 scores, precision, and recall.

TECHNICAL SKILLS

- **Languages & Frameworks**: Python, SQL, TensorFlow, PyTorch, Keras, Pandas, scikit-learn, Flask, Streamlit
- **AI/ML Models**: YOLOv5, BERT, GPT, SBERT, Bidirectional LSTM, CNN-LSTM, Sentence Transformers
- **AI/ML Domains**: Computer Vision, NLP, Deep Learning, RAG, Transfer Learning, Semantic Search
- **Data & Search**: FAISS Vector Search, Vector Embeddings, ETL Pipelines, Geospatial Visualization, Time Series
- **Cloud & Deployment**: Docker, AWS SageMaker, GCP, CI/CD Pipelines, FastAPI, MLOps
- **Development Tools**: Git, GitHub, Jupyter, VS Code, MLFlow, Folium, Plotly, OpenWeatherMap APIs
- **Soft Skills**: Strategic Thinking, Problem-Solving, Time Management, Collaboration, Adaptability

CERTIFICATIONS & ACCOMPLISHMENTS

- **AI/ML for Geodata Analysis** (ISRO)
- **IIT JAM 2023**: AIR 218 (out of 3563)
- **CodeSmash 2.0**: 171st of 3000+ (97/100)
- **Kaggle**: 0.81 score in PII Detection challenge