


Akshara Bulkapuram

NIT Surathkal (NITK)

Branch : Artificial Intelligence

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Academic Qualifications

Year	Degree/Certificate	Institute	CPI/%
2021 - Present	B.Tech in AI	National Institute of Technology Surathkal, Karnataka	8.31/10
2019 - 2021	TS-BIE(XII) - PCM	Narayana Junior College, Madinaguda, Hyderabad, Telangana	98.6%
2019	TS-SSC(X)	Daffodils High school, Sangareddy, Telangana	10/10




Technical Skills

- **Languages:** C, C++, Python, HTML, CSS, SQL, JavaScript
- **Development Skills:** Flexbox, Grid, Bootstrap, PostgreSQL
- **Python libraries:** Numpy, Pandas, Matplotlib, Plotly, Dash, Pytorch, Flask, BeautifulSoup
- **Tools:** VS code, Jupyter Notebook, Google Colab, Kaggle

Work Experience

- **Software Developer Intern / Hewlett Packard Enterprise (HPE)** (Apr'24- Jun'24)
 - Worked on developing Sustainability dashboard for software. This involved researching on what software sustainability means and what type of measures, data is required and how to calculate carbon emissions due to a software.
 - Worked on data collection, data validation, data preprocessing and implementation of various plots and insights that can be shown on dashboard using python, PostgreSQL, Pandas and plotly
 - Developed a dashboard with relevant plots related to sustainability insights using dash html, CSS, and JS
 - Incorporated Machine Learning to predict future trends in usage data and provided forecast of carbon emissions and other insights

Key Projects

- **Medical Chatbot** / Python, Pytorch, transformers, Elasticsearch, Flask, Beautifulsoup  (Aug'23- Nov'23)
 - Designed and developed a question entailment-based retrieval chatbot built on MedQuAD dataset containing 47k Q-A pairs.
 - Utilized a Sentence transformer BERT model and used it on our data to fetch the Most Accurate answer from the database given a Query by checking similarity between sentence embeddings of user query and questions in database.
 - Used Elasticsearch based indexing is used for optimizing the database fetching and faster retrieval.
 - Developed a method to incorporate questions not present in the database (similarity <30%) by web scraping context for the user query and using BERT for extracting answer from context and then store it again to database
- **Satellite image segmentation** / Python, tensorflow, tensorflow-keras, Matplotlib, PIL, sklearn  (Jan'24- Mar'24)
 - Developed DeeplabV3+, VGG16-UNet, Pix2Pix-GAN models for image segmentation of Mumbai city satellite dataset consisting of satellite images with their ground-truth masks
 - Designed pipelines for testing models and hyperparameter tuning to improve their performance of segmenting a given image into six classes namely - vegetation; built-up ; informal settlements ; impervious surfaces ; barren ; and water.
 - Achieved remarkable results with DeeplabV3+ performing the best with a dice coefficient of 0.9 followed by pix2pix-CGAN model with dice coefficient of 0.82
- **Breast cancer classification** / Python, Pandas, Matplotlib, sklearn, WEKA, Streamlit  (Sep'23- Nov'23)
 - Performed various data analysis techniques and feature selection techniques on Wisconsin Breast cancer dataset.
 - Trained support vector machine, multi-layer perceptron, Random Forest classifier models for classification task
 - Built a user interface and deployed it using streamlit for getting user data and predicting the type of cancer (malignant or benign)

Positions of Responsibility – (Student clubs)

- **ISTE – Indian Society for Technological Education** (Nov'22 - present)
 - Conducted the Philosophy through Art Summer Mentorship Program and helped in hosting seminars on AI
 - Collaborated with club members to work on year-long projects in various fields.
 - As a part of ISTE social initiatives group, collaborated in organizing an interactive session with NITK high-school students to spread awareness on Mental Health and Menstrual health.
- **DDFC (Dance Drama and Fashion club)** (Jun'22 - present)
 - Contributed in organizing various cultural festivals/events in campus.

Areas of Interest

- Machine Learning
- Natural Language Processing
- Web Development
- Data Science
- Computer Vision
- Database management system