# KOUSHIK SALAMMAGARI

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## Education

**Master of Science in Computer Science**
Colorado State University, USA — Aug 2022 – May 2024

**Bachelor of Technology in Computer Science and Engineering**
Jawaharlal Nehru Technological University, Hyderabad (JNTUH), India — Aug 2016 – May 2020

## Technical Skills

**Languages/Databases**: Python, JavaScript, HTML, CSS, SQL, PostgreSQL, MySQL, MongoDB, Vector DB (Chroma)
**Frameworks/Libraries**: NumPy, Pandas, Scikit-learn,TensorFlow, PyTorch, langchain, ollama Keras, Spacy-LLM
**Data Visualization Tools**: Matplotlib, Plotly, Tableau, Power BI
**Cloud Technologies**: AWS (EC2, SageMaker, Lamda, ECS, EKS), GCP (Firebase, Vertex AI, Gemini AI)
**Testing Skills**: Pytest, Mocha, mutation testing ( Cosmic-ray, Mutatest, Mutpy, mutmut)
**IDE's**: Microsoft VisualStudio, PyCharm, Spyder, Jupyter Notebook, Google Colab
**Tools/Development**: GitHub, Bitbucket, Docker, REST, HuggingFace, Kubernetes

## Professional Experience

**Symantrix** — **July 2020 – June 2022**
*Software Engineer* — *Hyderabad, India*

- Developed a real-time recommendation system using data from steel manufacturing plants, analyzing data streams from hundreds of sensors and serving predictive models and live KPIs to assist the shop floor in decisions related to energy savings. Achieved a 5% YoY cost reduction using Redis (caching), WebSockets, and MongoDB (data store).
- Developed a temperature and material prediction framework using LSTM, Gradient Boosting and Random Forest. Performed Domain Specific Feature Engineering, Data Augmentation and Hyper parameter Tuning. Built data wrangling and processing pipelines for structured (MySQL) and semi-structured (MongoDB) data.

**Learnasky** — **May 2019 – March 2020**
*Full Stack Developer, Co - Founder* — *Hyderabad, India*

- Successfully Re-launched a Learning Management Platform at my undergraduate university, allowing teachers to post assignments and students to complete and submit them with ease.
- Developed responsive dashboards for teachers, students, and institutes. Created a chatbot from scratch that will provide answers to FAQs for each institute.
- Utilized a robust technology stack including Python, Flask, Node.js, HTML5, CSS3, JavaScript, React and ML/NLP for the chatbot.

## Technical Projects — ***Detailed Link*- https://t.ly/r87fU**

**Medical AI Assistant - Using AI Agents/RAG** — **Jan 2024 - May 2024**

- Developed a custom medical chatbot using Langchain and ChatGPT API, integrating multiple medical PDFs for knowledge sourcing.
- Leveraged the OpenAI Embeddings to integrate advanced language generation, significantly increasing the chatbot's response capabilities for medical inquiries.
- Employed Hugging Face's Instruct embeddings, as an alternative to OpenAI embeddings, to enrich the chatbot's understanding and processing of natural language inputs.

**Transfer Learning for Enhanced Image Recognition** — **January 2023 - May 2023**

- Conducted in-depth analyses of existing CNN architectures including ResNet, AlexNet, and MobileNetV2, evaluating their performance on Stanford Dogs and CIFAR-100 datasets to identify optimal model configurations.
- Utilized ResNet50 architecture for fine-tuning the CIFAR-100 dataset, achieving 80% accuracy.
- Fine-tuned MobileNetV2 on the Stanford Dogs dataset to achieve 90% accuracy through transfer learning.

**Research Project: Misinformation Detection System** — **August 2023 – December 2023**

- Engineered an NLP-based fake news classifier leveraging GloVe vectorizations with LSTM, achieving top accuracies of 99.96% and 95.98% on diverse datasets.
- Extended model application to article titles, successfully predicting fake news with over 90% accuracy, demonstrating the model's adaptability and efficiency.
- Validated classifier's effectiveness on unseen political news, accurately detecting misinformation and highlighting its potential in critical information verification.
- Conducted comprehensive evaluations of various vectorizer and classifier combinations, including TF-IDF, CountVectorizer, BERT, GloVe, Logistic Regression, Naive Bayes, CNN, and LSTM, optimizing model performance and accuracy.

**Voice Controlled Smart Assistant Using Raspberry Pi** — **August 2022 - December 2022**

- Integrated Google Speech-to-Text and Text-to-Speech APIs to enable precise voice command recognition and responsive verbal output in "JARVIS"
- Constructed a multi-label classification model and curated custom datasets to accurately interpret complex user intents.