ANJANA ASHOK

SUMMARY

Passionate about building intelligent systems with real-world impact. Experienced in backend development, machine learning, and generative AI, with practical skills in fine-tuning language models and deploying AI-driven solutions. Completed IBMs Generative AI Engineering Certification. Known for a strong academic foundation, effective collaboration, and a background in mentoring and research.

WORK EXPERIENCE

Associate Software Engineer - Backend & ML Engineer, XTG Technologies

Feb 2024 - Present

- Contributed to the development of a Real-Time Insights Platform.

- Extracted features using DINOv2 and YOLOv8, labeled data with the Segment Anything Model, implemented autoencoders for anomaly detection, and applied the Frequent Pattern Growth method for item-set mining.

- Applied Attention Fusion and Laplace Score for feature selection across multiple data streams, enhancing feature importance for clustering and anomaly detection tasks.

- Investigated cutting-edge generative models like OpenAIs API suite (GPT-4, GPT-4 Vision, Whisper), LlaMA 2, LLaVA, and others to effectively address diverse client challenges.

- Utilized prompt engineering (few-shot prompting) to guide models toward accurate output formats and appropriate responses.

Assistant Professor, Government Engineering College Wayanad

Sep 2018 - Aug 2022

- Instructed undergraduate and graduate-level courses in Data Structures, Compiler Design, Formal

Languages and Automata Theory, Soft Computing and Machine Learning.

- Advised four master's students on their thesis projects related to Network Security, resulting in their successful defense and subsequent publication in reputable journals.

- Mentored undergraduate students in developing projects related to Machine Learning.

- Supervised the operations of the Database Management Systems Lab, Operating Systems Lab, Data Structures Lab, and Compiler Design Lab, guiding students through hands-on learning experiences and providing mentorship for their projects.

PROJECTS

DeeProtein: Deep Learning for Protein Function Prediction

- Built a deep learning model (CNN) to predict protein functions from raw amino acid sequences.

- Used NLP-inspired embeddings and Gene Ontology data for training on 560k+ sequences.

- Part of the iGEM Heidelberg 2017 software project for functional genome annotation.

GENOME ANNOTATION USING CONVOLUTIONAL NEURAL NETWORKS

- Developed a multi-label model for protein function prediction from raw sequence data.

- Trained on ~10 million protein sequences representing 886 protein classes.

- Achieved an area under the curve of the receiver operating characteristic of 99% on the validation set, with an average F1-score of 78%.

- Included a word2vec embedding for amino acid 3-mers, generated on the complete UniProt database.

TASTE HUNT: An Android Application to Find Best Restaurants Near Me

- Developed a responsive Android Application using Java.

- Utilized Android Studio as the development environment.

- Integrated GPS and location services to determine user location.

PLACEMENT EDUCATION MANAGEMENT SYSTEM

- Developed a responsive website using HTML, CSS, PHP, and JavaScript.

- Integrated a MySQL database for storing user information.

- Implemented user authentication and secured data transactions using encryption techniques.

TECHNICAL SKILLS

- Programming Languages: Python, Java, C

- Artificial Intelligence & Machine Learning: Machine Learning, Deep Learning, Artificial Intelligence (AI), Artificial Neural Networks, Retrieval-Augmented Generation (RAG), LangChain

- Frameworks & Tools: TensorFlow, PyTorch, Keras, Scikit-learn, Flask API

- Data Handling & Analysis: NumPy, Pandas

- Web Development: HTML, CSS, JavaScript, PHP

- Database Management Systems: SQL, MySQL

- Operating Systems: Linux, Windows

- Tools & Platforms: Visual Studio, Google Colab, Microsoft Azure Custom Vision

LANGUAGES

English, Malayalam, Hindi, Tamil

AWARDS / ACTIVITIES

- First prize in Project Presentation at "Winter School for Women on Unstructured Data Analytics and NLP" (ICFOSS)

- Qualified UGC NET - 2020

- Qualified GATE - 2016, 2021

CERTIFICATIONS

- IBM Generative AI Engineering Certification Coursera (Completed, April 2025)

- Qualified UGC NET 2020

- Qualified GATE 2016, 2021

EDUCATION

Master of Technology in Computer and Information Science

Cochin University of Science and Technology | Aug 2016 - April 2018

- Thesis: "Genome Annotation Using Convolutional Neural Networks"

Bachelor of Technology in Computer Science and Engineering

Government Engineering College Wayanad | Aug 2012 - Aug 2016