

# MANOHAR PALANISAMY

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## WORK EXPERIENCES

### Senior Associate - Machine learning

Dec 2018 – Dec 2023

*Sevasys Technologies*

*Bangalore*

- Deployment of Document Q&A RAG pipelines in Generative AI, leveraging LLMs and vector embeddings to enhance natural language processing capabilities. Utilized AWS services and efficient deployment tools for effective implementation.
- Collaborated across teams to deploy scalable AI systems, integrating cloud computing, version control systems, and CI/CD pipelines for iterative development and deployment of advanced machine learning solutions.
- Optimized operational efficiency by integrating AI models into production systems using containerization, automation frameworks, and modern AI deployment practices, ensuring robust deployment of Document Q&A RAG pipelines and other AI applications.

### Executive Software Developer

Jan 2017 – Dec 2018

*QuantumLink Communications Pvt Ltd*

*Mumbai*

- Developed FieldSense, a research-based web application for Salesforce tracking.
- Handled feature enhancements and bug fixes, including requirements analysis, design documentation, and impact analysis.
- Worked on an email system, ensuring timely delivery and quality, adhering to network and email protocols and client standards.

## TECHNICAL SKILLS

**Gen AI Frameworks:** OpenAI, Langchain Ecosystem, HuggingFace, Google Generative AI,

**Artificial Neural Networks:** Perceptron, MLP, CNN, RNN, LSTM, GRU, BRNN, Autoencoders, GAN, Residual Net, Transformers, ChatGPT, Llama3, Gemini Pro, Gemini Pro Vision.

**ML Model And Algorithms:** Linear Regression, Logistic Regression, SVM, Gradient Descent, SGD, minibatch GD, Adam etc.

**Coding Skills:** Scripting and web development including Python (NumPy, scikit-learn) , Streamlit, Java, FastAPI, HTTP Server, Mail protocols and DNS server

**Deep Learning Frameworks:** TensorFlow, Keras, PyTorch

**Natural Language Processing:** NLTK (Natural Language Toolkit), spaCy

**Model Evaluation:** Cross-validation, ROC curve analysis, Confusion matrix, Grid search, Hyperparameter tuning

**Deployment:** Docker, AWS ECR, SageMaker, BedRock, AppRunner, EC2, S3, Kubernetes, Huggingface Spaces, Vercel, CloudflareCDN

**Cloud Platforms:** AWS

**Software Development:** Agile methodology, Continuous Integration/Continuous Deployment (CI/CD), GitHub Actions

**Database Management:** MySQL, MongoDB, Chroma DB, FAISS, Pinecone Vector Database

**Version Control:** Git

## CERTIFICATIONS

### Generative AI with Large Language Models [MAVEJZ9P9AV5]

Sep 2023 – Apr 2024

*DeepLearning.AI And Amazon Web Services*

*Coursera.org*

### Deep Learning Specialization [EKJCGU5G2NXF]

July 2023 – Feb 2024

*DeepLearning.AI*

*Coursera.org*

### Machine Learning Specialization [2CE3DQW8Z2NG]

Jun 2023 – Feb 2024

*Stanford University And DeepLearning.AI*

*Coursera.org*

### Applied AI with DeepLearning [DRENBK43NW8]

Dec 2021 – Jan 2022

*IBM*

*Coursera.org*

## PROJECTS

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### **RAG-Powered Document Q&A with LLMOps** | *AWS Bedrock, AppRunner, ECR, Langchain, FAISS, Docker, GitHub Actions,*

- Implemented a RAG model for document-based Q&A using AWS Bedrock meta.llama2-13b-chat-v1 for inference and amazon.titan-embed-text-v1 for embeddings, leveraging LLMOps principles.
- Utilized AWS services like Bedrock, AppRunner, and ECR for scalable deployment and Langchain for NLP tasks.
- Employed FAISS for efficient similarity search and clustering, Docker for containerization, and GitHub Actions for CI/CD, adhering to LLMOps best practices.

### **Gemini Pro: Text-to-SQL Query Generation** | *Python, Gemini Pro, SQLite, Streamlit, Huggingface Spaces* **Live**

- Developed an end-to-end project utilizing the Google Generative AI - Gemini Pro Model.
- Created a user-friendly interface using Streamlit for text-to-SQL query generation.
- Designed and implemented functionality to extract information from SQLite databases based on user input prompts.
- Utilized Huggingface Space deployment for seamless integration of AI models, making it accessible via the web at <https://huggingface.co/spaces/ManoharPalanisamy/TextToSQLGenerativeAI>

### **ChatGPT MCQ Generator** | *OpenAI API, chatgpt-3.5-turbo, Langchain, Streamlit UI, AWS EC2, Huggingface Spaces*

- Created a modular MCQ Generator using the OpenAI API, chatgpt-3.5-turbo model, Sequential Langchain, and Streamlit UI.
- Utilized advanced natural language processing capabilities to get user inputs and subject-specific data to generate multiple-choice questions (MCQs).
- Presented MCQs in a user-friendly table format via Streamlit UI and deployed the project on AWS EC2 for accessibility and scalability.

### **Gemini Pro Vision: The Future of Invoice Data Extraction** | *Python, Gemini Pro Vision, Huggingface Spaces* **Live**

- Developed a cutting-edge solution to automate invoice processing using Google Generative AI Gemini Pro Vision Model.
- Leveraged image-to-text conversion and advanced NLP techniques to extract key information from invoices with precision and accuracy. I have Used the Streamlit interface for designing the application.
- Integrated Huggingface Spaces for deployment and management, making it accessible via the web at <https://huggingface.co/spaces/ManoharPalanisamy/InvoiceExtractor>

## PERSONAL BLOG

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### **www.decodeai.in** | *JAM Stack, Jekyll, Cloudflare, Vercel, ImageKit.io, Umami Analytics, Giscus.app, Crisp* **Live**

- Regularly publish articles on machine learning, deep learning, and other technology-related topics.
- Provide valuable resources and insights to fellow tech enthusiasts and learners.

## PUBLICATION

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### **Fake Account Eliminator** **March 2015**

*National Conference on Engineering Applications for Developing Smart Cities - NCEADS*

- This software is designed to find and remove fake accounts on platforms like Facebook, Gmail, and Twitter in India.
- It uses the UIDAI (Unique Identification Authority of India) as a key part of its operation.
- India has many fake users on social media and email, so this tool helps to identify and eliminate them. It enforces a rule where each person can only have one account, reducing problems for real users and the public.

## EDUCATION

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### **Bachelor of Engineering in Computer Science** **May 2016**

*Dhirajlal Gandhi College of Technology, Anna University*

*Salem, Tamilnadu*