

SUBHAM THIRANI | My Website: subhamthirani.tech

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4+ years of experience in building end-to-end solutions using Machine Learning, Generative AI and quantitative models, alongside full-stack development. Delivered impactful POCs for Apple teams, managed MLOps pipelines and cloud deployments, and applied analytics and scripting for financial insights to solve real-world challenges with innovative technology.

TECHNICAL SKILLS

- **ML/AI:** Data Pre-processing (Imbalanced and Missing Data Treatment), Dimensionality Reduction, Regression, Classification, Boosting Decision Trees, Clustering, Optimization, Deep Learning, Graph Analytics (Knowledge Graphs, Graph Neural Networks)
- **Statistics and Time Series Analysis:** Statistical and Frequency-based feature engineering, Classification and Forecasting (ARIMA variants, LSTM), Anomaly detection systems
- **Generative AI, LLMs:** Langchain, LangGraph, Llama stack, Vector DB, Agents, Ollama, Transformers, RAG
- **Full Stack Development :** FastAPI , SpringBoot , Flask , Angular, HTML5, CSS, Bootstrap4, Node.js, MySQL, MongoDB
- **NLP, Computer Vision:** Transformer-based models (Generation and Understanding), Object Detection
- **Languages, Frameworks:** Python, Java, JavaScript, SQL , TensorFlow, Pytorch, Neo4j, Hugging Face, Git, Exposing ML models over an API, Machine Learning System Design best practices
- **Quantitative Finance Models**
- **DevOps, MLOps:** AWS ML, BentoML, DagsHub, DVC, MLflow, Nginx, Docker, Kubernetes, Ansible, Terraform

PROFESSIONAL EXPERIENCE

Project Lead Engineer, Apple COE (Wipro)

[Dec 2020-till date]

Traffic Scripter Detection

- Developed machine learning solution using Random Forest to identify scripters causing server load issues
- Implemented statistical techniques for exploratory data analysis, feature engineering and model evaluation
- Developed an alert system integrating human-in-the-loop mechanisms for overrides
- Reduced server load and improved operational efficiency by 40%

Chatbot Integration for Performance Dashboard

- Designed sophisticated chatbot using LLMs like Mistral and Gemma for Apple
- Fine-tuned large language models (LLMs) to enhance accuracy and deliver contextually relevant responses for Apple-specific tasks
- Enhanced developer productivity by enabling complex, natural language queries.
- Improved resource allocation and bottleneck identification for testing processes

Lease and Invoice Segregator

- Automated information extraction, summarization, and severity tagging from Apple showroom leases and invoices using advanced NLP techniques
- Built a comprehensive dashboard in collaboration with the UX team for data visualization, improving team workflow
- Improved document processing efficiency by 60%

AWS Infrastructure Automation

- Streamlined server allocation for 100+ apps on AWS
- Reduced manual infrastructure management by 80% improving analysis accuracy
- Built AWS infrastructure, developed automated tools, warmup tools for Apple online store launches
- Eliminated 100% manual intervention during New Product Introduction (NPI) launches

Full Stack

- Led the development of full-stack internal tools to streamline Apple's NPI launches for flagship products including iPhone and Mac
- Automating critical tasks using Python, Shell scripting to enhance team productivity and efficiency

POCs

- Automated QA processes by integrating data from issue trackers, Chorus, and Confluence, identifying common errors and proactively addressing them
- Integrated Apple's proprietary GenAI libraries to develop AI-driven applications for cross-functional

teams, optimizing decision-making processes

ACADEMIC DETAILS

- BTech (Electronics and Comm.), VIT – Vellore, 2020 : CGPA 8.72/10

CERTIFICATIONS

- AWS Certified AI/Machine Learning Practitioner
- LangChain Academy Introduction to LangGraph

ACHIEVEMENTS

- 2nd position in **HackBattle'19** hack conducted by IEEE Computer Society of India, VIT.
- 6th position in **CISCO IoT** hack conducted by IEEE Society, R.V. College of Engineering.

ADDITIONAL PROJECTS

DynamicForm AI: Adaptive Document-to-Form Generator

- Built an AI-powered application using LangChain, Docling, and Streamlit to dynamically generate and edit forms based on PDF or document content.
- Extracted text, images, and tables, allowing users to preview PDFs, select images, and adapt UI elements in real-time.
- Delivered structured JSON outputs with editable, form-specific configurations for downstream applications.

AI-Powered Codebase Insight and Analysis Platform

- Developed Python-based tool for analyzing codebases using LangChain and LangGraph
- Implemented code parsing system to detect frameworks, map API endpoints, analyze DB operations
- Built interactive visualization system using Streamlit for architectural insights
- Integrated with Groq API for high-performance LLM inference

No Code Task Specific LLM Model Fine-Tuning Platform

- Built an automated system to fine-tune models by specifying Hugging Face model IDs, tasks (classification, QA, etc.), and datasets(also mapping for classification) with minimal effort
- Developed a flexible pipeline leveraging parameterized cross-validation for hyperparameter tuning (e.g., learning rate, epochs) and streamlined dataset preprocessing to optimize experimentation
- Implemented task-specific evaluation metrics and comparative performance visualization to assess pre- and post-fine-tuning results effectively.

Personal RAG QA Advance ChatBot

- Built on top of LLM (Large Language Model) using Langchain
- Enabling context-aware query processing by leveraging conversation history to enhance response quality

Advanced Multi-Layer Txt/Web Assistant

- Streamlines research by expanding single query to multiple, fetching links and documents, extracting data from articles and YouTube, and providing summaries. Technologies include Langchain, LCEL, Google Palm 2 LLM, and Python

Black-Scholes Model Application (blackscholeapp.streamlit.app)

- Developed a tool to calculate call and put option prices using the Black-Scholes model, with heat maps generated based on price and volatility ranges.
- Created a separate page for the implied volatility versus spot price graph.

Markowitz Model Application (markowitzmodel-portfolio.streamlit.app)

- Developed an optimal portfolio construction app using the Markowitz model
- User choose an index (e.g., Nifty 50, Nifty Bank etc) or provide custom stocks to get optimized portfolio.

Capital Asset Pricing Model (CAPM) Tool(capmodel.streamlit.app)

- Built a CAPM analysis tool for evaluating stock portfolios
- Users can choose the stock and index (Nifty50, Sensex, S&P 500) to get the beta, alpha, expected return

Creating equity, option buying, selling algos

- Creating Pine Script, Python algorithm

Option Open Interest (OI) Analysis Tool

- This tool fetches option chain data from the broker and includes a UI built in Appsmith to visually track changes in Option OI over time.
- Pinpoints strike where option sellers were establishing positions while the market traded in range.

Project Epione

- Hand Gesture Recognition in 3D using OpenCV, measure ECG and predict heart disease using regression.