

SANIDHYA MANGAL

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Technical Skills

Development Tools: Python (Pandas, Scikit-Learn, Numpy, Tensorflow, Keras, Pytorch, Django, Flask, Plotly), Bash
Analysis Tools: SQL (Presto, MySQL, Oracle, DynamoDB, ORM), MS Excel, MS PowerBI
Deployment Tools: Docker, Kubernetes, GIT, DataBricks, AWS (Lambda, EC2, EKS, ECS, RDS, S3, Sagemaker)
LLM Tools: MCP Server, LangGraph, Llama-Index, OpenAI, AzureOpenAI, GPT, Azure AI Search.

Experience

HealthEdge

February 2023 – Present

Data Scientist

Nashville, TN

- **GenAI and AgenticAI:** Led the initial development of an agent for real-time retrieval and summarization of related claims lifecycles, enabling chat-based adjudication workflow observation and debugging.
- **GenAI and RAGs:** Deployed a GenAI chatbot for documentation (+38% customer satisfaction) and contributed to the development of an organizational RAG framework for rapid application development.
- **OCR and Entity Extraction:** Automated provider onboarding by leading a project that transformed unstructured provider contracts into structured data using OCR and LLM models, resulting in 1000+ man-hours saved per customer.
- **Payment Integrity:** Developed a claims data analysis tool that identified payment integrity violations (MUE, transient care, duplicate claims), resulting in \$2.5M in annual savings across all customers.
- **PowerBI and Data Analytics:** Designed executive dashboards encompassing claims lifecycle, payouts monitoring, and workbasket management, integrated with semantic models to drive a 20% improvement in operational efficiency.
- **Statistical ML:** Developed an XGBoost model for the Office of Customers, enabling an 8% amplification of key customer health score drivers.

Asurion

May 2022 – August 2022

Data Science Intern

Nashville, TN

- Assembled DS life-cycle: ideation, opportunity sizing, modeling, deployment, and exposure in A/B testing.
- Engaged with stakeholders to identify & define business & analytical needs; translated insights into business outcomes.
- **LLM:** Experimented with different BERT variants to improve classification model robustness on a small dataset.
- **ML Classifier:** Designed SVM and Decision tree models stacked on TF-IDF to analyze real-time call transcription, influencing expert behavior and driving upsell, resulting in an estimated 6% improvement in sales, equivalent to \$1.2M.

Maize Zhou Lab

July 2021 – May 2022

Research Assistant

Nashville, TN

- **Image Classification:** Contributed in publishing multiple research by developing a toolkit for state-of-the-art ML models to facilitate genome filtering on long and short reads, improving overall F-1 score by 20% from predecessors.
- **MLOps:** Translated research problem into multi-step pipeline; data processing, modeling, evaluation & deployment.

Engineerbabu

June 2020 – June 2021

Machine Learning Engineer

Indore, India

- Supervised a team of six that reduced inference time by 30% for machine learning models by improving the ML pipeline.
- **Image Processing:** Designed a CNN based tool to perform prognosis of lung and colon cancer with 91% precision.
- **EDA:** Optimized model training by 12% through rigorous hypothesis testing and adherence to data sanitation standards.

Projects

Fizbuzz | *GenAI, LLMs, Llama-Index, Agentic AI, MCP Server, YahooFinance*

- Developed an AI agent to present a holistic view of a stock by compiling and consolidating financial data of stocks.
- Engineered an MCP server wrapping YahooFinance APIs to automate financial data retrieval for agentic workflows.

Interpretable-BERT | *PyTorch, Transformers, Interpretability, Named Entity Recognition, Classification, NLP*

- Designed probes to leverage pre-trained BERT representations to perform named entity recognition on the input text.
- Analyzed contextual representations to examine how pre-training task affects the linguistic knowledge in transformers.

Education

Vanderbilt University (*Nashville, TN*), MS in Computer Science; 3.94/4.0

Medi-Caps University (*Indore, India*), B.Tech in Computer Science; 8.41/10.0

Publications

- Yunfei Hu, **Sanidhya Mangal**, Lu Zhang, and Xin Zhou. "Automated filtering of genome-wide large deletions through an ensemble deep learning framework." *Methods* (2022).
- **Sanidhya Mangal**, Aanchal Chaurasia, and Ayush Khajanchi. "Convolution neural networks for diagnosing colon and lung cancer histopathological images." *arXiv preprint arXiv:2009.03878* (2020).
- **Sanidhya Mangal**, Poorva Joshi, and Rahul Modak. "LSTM vs. GRU vs. Bidirectional RNN for script generation." *arXiv preprint arXiv:1908.04332* (2019).