

SANDRA KETTIDATHIL CHANDY

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EDUCATION

INDIANA UNIVERSITY, BLOOMINGTON

Masters in Data Science

Bloomington, IN

Expected May 2027

Relevant course work: Statistical inference using R, Applied Machine Learning, Applied Database Technologies, Computer Vision, Data visualisation

COLLEGE OF ENGINEERING, TRIVANDRUM

Bachelors in civil engineering

Kerala, India

CGPA - 9.6 / 10

Relevant coursework: Linear Algebra and Calculus, Vector calculus, Differential Equations and Transforms, Programming in C, Probability, statistics and numerical methods.

WORK EXPERIENCE

IBS SOFTWARE

Software Development Engineer- 1

Kochi, India

July 2023- July 2025

- Optimized critical features in Expedia's iOS Property Details Page (18M+ users) using experimentation and data-driven decisions.
- Integrated GraphQL with optimized parallel loading, improving load time 32% and reducing customer drop-off 12%.
- Designed A/B tests and applied ML-based ranking improvements, increasing booking accuracy by 1.7 bp.
- Instrumented analytics events and conducted deep-dive performance analyses to validate product improvements.

TUTOR

National service scheme

Trivandrum, India

June 2016- Sep 2016

- Tutored underserved students in STEM subjects under NSS, India, supporting equitable access to education.

PROJECTS.

- Medical Claim Fraud Detection (Graph ML)**

Built a patient-provider claim graph to detect anomalous claims. Applied GraphSAGE and anomaly detection using Python and PyTorch. Improved fraud audit precision by 35% on real-world claim data.

- Derma Scanner — AI Skin Cancer Detection Web App**

Developed a web app to classify skin lesions and generate triage reports. Implemented EfficientNet-B0 with Python, Flask, and HuggingFace for deployment. Achieved 80% accuracy and automated PDF report generation.

- Hospital Readmission Risk Model (Cost-Aware)**

Predicted 30-day hospital readmissions to optimize patient care and resource allocation. Used scikit-learn and SHAP for cost-aware thresholds and model interpretability. Achieved AUC ~0.82 with clinically explainable insights.

- Credit Approval Risk Model (Fairness Audit)**

Built credit-risk models while ensuring fairness across demographics. Applied Python, scikit-learn, SHAP, and fairness metrics (DP, EO) for bias monitoring. Developed a governance dashboard for responsible AI compliance.

- Metacognition in LLMs — Qwen-7B-Instruct**

Replicated experiments to study self-monitoring and reasoning of Qwen-7B-Instruct. Built controlled inference pipelines using Python and PyTorch to analyze internal activations. Followed methodology from "Language Models Are Capable of Metacognitive Monitoring and Control of Their Internal Activations" (Li Ji-An et al., 2025).

SKILLS

- Programming:** Python, SQL, R, Java, Kotlin, Swift UI, C++, Bash/Shell Scripting
- ML/DL:** scikit-learn, PyTorch, TensorFlow, Keras, XGBoost, LightGBM, Hugging Face Transformers
- Data Engineering:** Spark, Airflow, Dask, Kafka, Hadoop
- Databases:** MySQL, PostgreSQL, MongoDB, Neo4j, Redis, Cassandra, NoSQL, Cypher
- MLOps / DevOps:** Docker, FastAPI, MLflow, GitHub Actions, Jenkins, AWS (S3, EC2, Lambda), GCP
- Analytics & Visualization:** pandas, NumPy, matplotlib, seaborn, Plotly, Tableau, Power BI
- Tools & IDEs:** Jupyter Notebook, VS Code, PyCharm, Git, GitHub, Linux/Unix