

Annabelle Kanchirathingal

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Education

Cullen College of Engineering, University of Houston	May 2025
M.S. Engineering Data Science	
Louisiana State University	December 2022
B.S. Computer Science, Software Engineering Concentration; Minor in Analytics	
Coursework: Engineering Statistics Database Management Data Structures & Algorithms Machine Learning Deep Learning Data Mining Advanced Artificial Neural Networks Advanced Linear Optimization	

Work Experience

Operations Analyst Intern
iCodeEDU Remote August 2024 – April 2025
<ul style="list-style-type: none">Analyzed dropout patterns across 75+ students using SQL and Python to create targeted retention strategies that decreased student attrition by 23%Built and deployed performance analytics dashboard in Tableau that streamlined resource allocation and increased scheduling efficiency by 18%Automated monthly reporting processes using Python scripts and cron jobs, reducing manual effort by 35 hours per month
Web Developer
Positive Masculinity Remote July 2023 – April 2024
<ul style="list-style-type: none">Redesigned shopping cart architecture using React.js, eliminated 5-second page load delaysResolved 95% of critical support tickets within 2-hour SLA using Zendesk ticketing systemEstablished an automated testing framework using Jest and Cypress that reduced deployment bugs by 60%Partnered directly with clients through Figma mockups to capture requirements and execute QA protocols using Selenium
Research Assistant
Southern University and A&M College Baton Rouge, LA August 2022 – July 2023
<ul style="list-style-type: none">Built PySpark data pipelines that processed real-time feeds from 200+ agricultural sensors across 50 field sitesConducted statistical analysis using R on soil-crop relationships and generated insights that enhanced productivity forecasting accuracy by 17%Deployed predictive maintenance system using isolation forest algorithms and MongoDB storage, decreasing unexpected sensor failures by 40%Designed and launched a Flutter mobile application for real-time data visualization

Special Projects

MISO 2018-2024 Analysis Python, Excel, Prophet
<ul style="list-style-type: none">Developed time series forecasting models analyzing 50,000+ hours of grid data. Optimized ARIMA parameters through ACF/PACF analysis. Uncovered load pattern variations by hour-of-day and day-of-week. Implemented comprehensive model evaluation using industry-standard metrics(MSE, RMSE, MAE, and MAPE).
Effects of Signal Cleaning on lower limb biomechanics, EMG, and EEG signal R
<ul style="list-style-type: none">Developed signal cleaning pipeline for lower limb, EMG, and EEG data from gait analysis. Implemented Butterworth filters and ICA decomposition on 64-channel datasets. Validated processing effectiveness through Bland-Altman plots and power spectral density analysis, demonstrating quantifiable improvements in bio signal quality and physiological interpretation.
Stock Market Real-Time Pipeline Apache Kafka, Cassandra
<ul style="list-style-type: none">Engineered and deployed real-time stock market data pipeline leveraging Apache Kafka for streaming and Cassandra for scalable, fault-tolerant storage. Processed high-frequency financial transactions through low-latency event-driven architecture, optimizing query performance for rapid market insights and decision-making

Skills

Programming Languages: Python, Java, C, R, SAS
Database Management Tools: SQL Server, MySQL, PostgreSQL, MongoDB, NoSQL
Methodologies & Version Control Tools: Agile, SCRUM, Jira, Kanban, Git