# JEFFREY DAVID

+65 93731871
jeffreydavid255@gmail.com
github.com/Jeffrey-David
linkedin.com/in/jeffrey-david-25a54a204
Portfolio : jeffrey-david.github.io

## ABOUT

An enthusiastic Research Engineer at Singapore Management University specializing on AI and full-stack development. Currently developing AACHARYA.AI, a revolutionary platform for AI-powered education. I hold a Master's in Information Systems from NTU and a B.Tech in Computer Science from VIT. Skilled at developing scalable applications, deploying AI solutions, and managing cloud infrastructure. I previously worked as a Big Data Engineer at Accenture, optimizing and analyzing data pipelines.

## EXPERIENCE

**Singapore Management University** — Singapore
*Research Engineer* — *2024/09 - Present*

- Developed responsive LMS frontend features with React (Vite), Radix UI, and Tailwind CSS and built scalable backend APIs with FastAPI.
- Designed and optimized PostgreSQL and MongoDB data models to facilitate structured educational content and user interactions.
- Implemented Retrieval Augmented Generation (RAG) pipelines using Qdrant as a vector database to improve contextual search and AI-driven content production.
- Applied reinforcement learning techniques to customize the learning courses of students and integrated generative AI to automatically create course materials and curate it.
- Deployed backend services with Docker, set up CI/CD pipelines for smooth, automated deployments and managed infrastructure on GCP.
- Dedicated to "Training Non-Expert Humans using AI," the AACHARYA.AI platform has been used for POCs and embraced by universities and enterprise clients.

**Accenture Solutions Private Limited** — Bangalore, India
*Advanced Application Engineering Analyst* — *2022/11 - 2023/08*

- Trained in Apache Hadoop File System and learned to use different big data analytics tools like Apache Hive, Spark, Cassandra and more as a fresher.
- Designed, developed, and implemented end-to-end data pipelines using Hadoop ecosystem tools such as HDFS, Map-Reduce, Hive, and Pig.
- Successfully integrated data from various sources including structured and unstructured data, enabling efficient processing and analysis within the Hadoop cluster.
- Implemented ETL processes to move data from various sources to the data warehouse.
- Implemented real-time data processing solutions using tools like Apache Kafka.
- Documented processes, procedures, and best practices for Hadoop cluster management and data processing.

## INTERNSHIPS

**TalentKraft Pte Ltd** — Singapore
*AI Project Development Intern* — *2024/01 - Present*

- Conduct research and data gathering on relevant data for goal setting and performance review.
- Design and Develop Gen AI based solution to assist organisations in their Goal Setting and 360 Performance Review Process

**The Sparks Foundation** — Vellore, India
*Graduate Rotational Internship Program (Remote)* — *2021/02 - 2021/03*

- Conducted thorough data analysis to identify patterns, trends, and anomalies in diverse datasets.
- Evaluated the performance of machine learning models using appropriate metrics and fine-tuned algorithms for optimal results.
- Implemented data preprocessing techniques to clean, normalize and transform raw data into suitable formats for machine learning models.

## EDUCATION

**Nanyang Technological University**                                                                Singapore
*Master of Science in Information Systems*                                          *2023/08 - Present*
- CGPA : 4.80 / 5.00
- Completing in May, 2024
- Focusing on Data Science and Text Mining through my choice of coursework specialization.
- Courses: Text and Web Mining, Data Mining, Internet Programming, Research Methods for Data Analysis, Information Retrieval and Information Visualization

**Vellore Institute of Technology**                                                               Vellore, India
*B.Tech Computer Science and Engineering*                                        *2018/06 - 2022/05*
- CGPA : 8.78 / 10.00
- Core Courses: Data Structures and Algorithms, Operating Systems, Database Management Systems, Computer Architecture
- Elective Courses: Web Mining, Statistical Data Analytics and Artificial Intelligence for Beginners

## SKILLS

- **Programming Languages** - Python, Java, C, JavaScript
- **Web & Frontend Development** - HTML, CSS, Java Servlet, JSP, Radix UI, Tailwind CSS, React (Vite)
- **Backend & DevOps** - Docker, GCP, AWS, RESTful APIs, FastAPI, CI/CD Pipelines
- **Database Systems** - PostgreSQL, MongoDB, MySQL, Qdrant (Vector DB)
- **Artificial Intelligence** - RAG Pipelines, Generative AI, Machine Learning, Neural Networks, NLP, Reinforcement Learning
- **Big Data & Visualization** - Tableau, D3.js, Apache Spark, Apache Hive, Hadoop
- **Soft Skills** - Self-Motivated, Detail-Oriented, Problem-Solving

## PROJECTS

**Aspect-Based Sentiment Analysis of LGBTQ Issues in Singapore**
*Text Mining, Deep Learning, NLP, Tableau*                                        *2024/01 - Present*
- Web Scrap data from online discussion platforms like Reddit and HardwareZone.
- Train and Evaluate a BERT based Transformer Model for Sentiment and Aspect Classification
- Analyze the Aspect based Sentiments with respect to Time using Visualizations in order to gain insights.

**Twitter Sentiment Analysis with MLP, CNN and BERT**
*Text Mining, Deep Learning, NLP*                                                    *2023/08 – 2023/11*
- Developed a machine learning model using Multilayer Perceptron (MLP), Convolutional Neural Network (CNN) and BERT for Twitter Sentiment Analysis.
- Implemented data preprocessing, model training and evaluation.
- Collaborated with team members to optimize model performance and accuracy.

**Deep Learning Model for Analyzing Water Quality, Level, and Flow of Cauvery River**
*Deep Learning, Environmental Analysis*                                            *2021/11 – 2022/05*
- Developed a Deep Learning model to analyze water quality, level and flow of the Cauvery River in India.
- Implemented features to predict and monitor environmental parameters.
- Contributed to the understanding and assessment of water resources using advanced technology.

## CERTIFICATIONS

- Certificate of Completion of Accenture Greenfield Training Program                          *2023/01 - 2022/11*
- Intro to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning      *2021/03 – 2021/04*
- Artificial Intelligence for Beginners                                                                          *2020/04 – 2020/05*
- Machine Learning Using Python                                                                                *2020/04 – 2020/05*
- Statistical Data Analytics for Business Research                                                         *2020/04 – 2020/05*
- Data Science for Engineers - NPTEL                                                                          *2021/01 – 2021/03*
- Programming in Java                                                                                                 *2016/05 – 2016/06*