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Parramatta, NSW 2150

EDUCATION

M.Tech, Software
Systems(Data Analytics
Specialization)
**Birla Institute Of Technology
And Science**, Pilani, India
July 2019

Bachelor of Engineering,
Electronics And
Communication Engineering
**Sriram Engineering College,
Anna University**, Chennai,
India
April 2011

LANGUAGES

English

Tamil

VINOTH KARUNAKARAN

WORK RIGHTS

Holding full work rights in Australia under the Skills in Demand subclass 482 visa (secondary applicant), valid until 18th February 2029. Planning to obtain Permanent Residency in Australia soon and actively preparing for the transition.

PROFESSIONAL SUMMARY

Senior Data Scientist and Certified Google cloud Professional Machine Learning Engineer with overall 12.5 Years of IT professional experience, including 7 years in Data Science and Machine Learning. Passionate on exploring new technologies and applying them to real-world problems.

Skilled in developing AI and ML models, analyzing complex data sets, predictive Analytics and deploying complex models for various industries, including Fintech with drift detection and retraining pipeline. Hands-on experience in developing LLM utilities for RAG based chatbot applications.

SKILLS

- Cloud: GCP - (VertexAI, Cloud Storage, Pubsub, Cloudfunction, Bigquery, Cloud Run, Cloud Build, Feature Store)
- ML - Supervised & Unsupervised Algorithms
- Feature Engineering, Selection and Scaling
- Statistical modeling
- Data Visualization - Seaborn , Matplotlib
- Web Automation: Selenium, TestNG, Web Driver
- Databases: MySQL, MongoDB
- Containerization: Docker, K8's, Openshift
- CI/CD: Tekton, Cloud Build
- Gen AI - LLM, Prompt Engineering, RAG, Doc Chat, Agentic Framework (Lang Graph)
- Deep Learning - RNN, CNN, YOLO, Tensorflow, Keras
- Exploratory Data Analysis
- ML Orchestration - Kubeflow, MLflow, Airflow/Astronomer
- Languages: Python, Java, SQL
- API: REST, FLASK, FastAPI
- Version Control/Repository: Git/ Bitbucket
- Cloud IAC: Terraform

WORK HISTORY

May 2021 - April 2025

Altimetrik – Senior Staff Engineer – Data Science (FORD Artificial Intelligence Advancement Center), Chennai

Projects: FACT (Ford Active Chatbot Toolkit)-Structured, FACT-Parsers, Mach1ML2.0 MLOps Development Kit(MDK)

Tech Stack: Python, Pandas, Numpy, GCP (Bigquery, Secret Manager, Cloud Run), LIDA, LLM Models - GPT-4o, LLM, LangChain, Docker, Poetry, OpenCV, fastapi, Transformers, img2table, docTR, OCR, Vector Store (Elastic Search), Airflow, Kubeflow, ML, DL, Seldon, Scikit-learn, Lang Graph, Lang Chain.

Roles and Responsibilities:

- Designed and trained **production-grade ML models** leveraging TensorFlow, Scikit-Learn, optimizing performance across classification, regression, and recommendation tasks.
- Implemented **advanced feature engineering** techniques to improve model accuracy, robustness, and generalization, including embedding representations and dimensionality reduction.
- Designed & deployed customized **Kubeflow pipelines** for ML model development, training, and deployment in **Google Cloud Platform (Vertex AI) and Seldon Deploy**, ensuring scalable and automated model management.
- Developed a Custom **Airflow Operator & Sensor** as a Python library package, streamlining **end-to-end ML orchestration**, including data collection, transformation, model training, hyper parameter tuning, deployment, and inferencing (batch & online).
- Implemented **Drift Detection workflows** in **Vertex AI & Seldon**, enabling real-time monitoring of model performance and ensuring continuous adaptation to evolving data patterns.
- Developed an **LLM-powered alerting system** to detect incorrect Vehicle Software DID package installations, ensuring timely customer notifications to prevent further losses and costly recalls.
- Developed a **RAG-powered Text-to-SQL and visualization** insights system for Sales and Marketing teams, leveraging generative AI to eliminate technical barriers and reduce report turnaround time, enabling faster decision-making.
- Created scalable **FASTAPI** service utilities for multi-format data extraction, embedding storage, and image parsing using LLMs and OCR technologies.
- Developed a **DevOps AI Agent** POC using Langchain and Lang graph workflows.
- Led and mentored junior data scientists in advanced statistical modeling, fostering professional growth while evaluating emerging technologies to drive strategic investments and ensure consistent project success.

Key Achievements:

- Enhanced **model reliability** by integrating robust monitoring & alerting mechanisms for drift detection & retraining workflows, **minimizing model degradation risks**.
- Automated ML infrastructure, enabling Ford teams to productionize models seamlessly without worrying about deployment complexities—allowing them to **focus entirely on business logic & model development**.

June 2018 - April 2021

ADF Data Science Pvt Ltd - Data Scientist, Chennai

Project: Personify Loan Lending

Tech Stack: Python, MYSQL, SQL, Pandas, Numpy and Machine Learning Algorithms, Scikit-learn, Web scraping, AWS, BERT, Tensorflow, Keras, Flask

Roles and Responsibilities:

- Developed machine learning models for **credit risk prediction** for subprime unsecured loans.
- Customer **Segmentation** based on credit performance which helped to rewrite the **Credit risk underwriting**.
- Conducted **feature engineering** efforts to enhance model performance by creating new relevant variables from raw input data sources.
- Did **sentiment analysis** on chat data to analyze customer care operator and visitor conversations to improve business.
- Wrote headless browser automation code using selenium to scrape chat transcripts from third-party websites to our database by scheduling in airflow which reduced cost to paying to third-party for data request.
- Built **A/B testing frameworks** to test model quality.
- Optimized machine learning models for **predicting customer behavior**, leading to more targeted marketing campaigns.

November 2015 - May 2018

ADF Data Sciences Pvt Ltd - Senior Test Engineer Automation

Project: Personify Loan Lending

Tech Stack: Selenium WebDriver, TestNG, Eclipse, JIRA, JAVA, PYTHON, ML

Roles and Responsibilities:

- Managed overall automation for the project and delegated tasks between teams, reviewing the code written by peers.
- Prepared test strategies and guided/lead the team.
- Developed a framework using Selenium, TestNG, factory design pattern to support multiple lenders.
- Involved in preparing test procedures, test scenarios, cases, and test data.
- Involved in evaluating Machine Learning model evaluation.
- Conducting Data driven testing, cross browser testing.
- Performed smoke testing, System testing, Regression testing and compatibility testing.
- Prepared execution status, defect reports to client.

July 2014 - November 2015

Equiniti India Pvt Ltd - Junior Test Engineer, Chennai

Project: Independent Police Complaints Commission

Technologies Used: MTM, TFS, Selenium WebDriver, TestNG

Roles and Responsibilities:

- Created POM (Page Object Model) and data driven framework for selenium test scripts.
- Created Test cases using HTML element locators and Selenium WebDriver API commands.
- Involved in Requirement Analysis, Test Script & Test data Preparation, Test Execution and Defect Management activities.
- Developed web browser automation test scripts for regression as well as functional using Selenium and TestNG.

November 2012 - July 2014

Scintel Technologies Pvt Ltd - Quality Analyst Trainee, Chennai

Project: OMS (Order Management System)

Tech Stack: QC 11.50, Oracle SQL, Selenium WebDriver, JAVA

Roles and Responsibilities:

- Good Experience on Test Automation using Selenium Web Driver, TestNG Framework.
 - Prepared automation test scripts to validate various functionalities using Selenium WebDriver using JAVA.
 - Involved in Smoke Testing, Functional Testing, System Integration testing, Regression testing and Adhoc Testing.
 - Tracking the Defects to Closure and Defects Verification.
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CERTIFICATES/AWARDS

- Professional Machine Learning Engineer, Google Cloud Certified | September 2023 - September 2025
- GEM (Going to the Extra Mile) Award, Altimetrik | 2024
- Customer Champion Award, Altimetrik | May 2023
- Kudos Award, Altimetrik | January 2023
- GEM (Going to the Extra Mile) Award Altimetrik | 2021
- Participated in AI-for-India, Guvi | 2021
- Star performer award, ADF Data Science Pvt Ltd |2020
- Data Science Internship, ADF Data Science Pvt Ltd | June 2018 - May 2019
- Big Data Engineering with Hadoop and Spark, EICT Academy IIT Roorkee | July 2020 - October 2020
- ISTQB Certified Tester Foundation Level | 2012