

# Benny Daniel Tharigopala

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## SUMMARY

Technically astute Cloud Engineer with 5 years of expertise in Amazon Web Services (AWS), Google Cloud Platform (GCP), and Dockers. Adept at architecting scalable and secure cloud solutions, leveraging expertise in storage, networking, and automation. Experienced in Infrastructure Automation and optimizing cloud resources while delivering reliable and efficient cloud solutions to drive business growth and enhance operational efficiency.

## WORK EXPERIENCE

### Rimot

*DevOps Developer*

September 2023 – February 2024

*Halifax, Canada*

- Continuous Integration/Continuous Deployment (CI/CD) with AWS: **Orchestrated automated builds, tests and deployments** for Typescript and Python codebases on AWS Elastic Container Service (ECS), with Bitbucket pipelines resulting in 80% reduction in manual deployment efforts.
- Cloud Architecture Automation with Infrastructure as Code (IaC): Configured and maintained Infrastructure in the cloud leveraging **AWS CDK and Docker Compose to enable consistent, scalable and reproducible deployments across environments**.
- Automated Data Analytics and Visualization: Analyzed **spatial and boat sensor data** using interpolation & calculus methods to generate relevant metrics for voyages, aiming towards the electrification of fishing vessels for a First Nations (Membertou) fleet. Automated the entire application end-end with Python, AWS SNS for notifications, SQS for queuing capability, SES to deliver emails and S3 to store artifacts of the analysis resulting in elimination of manual analytics and chart plotting efforts by 100%.

### Climative

*Student Software Developer*

January 2023 – April 2023

*Halifax, Canada*

- Automated Testing and Continuous Integration/Continuous Deployment (CI/CD): Designed and implemented test scripts using **Jest and PyTest** to validate Machine Learning model endpoints for processing test records at scale (thousands), resulting in a significant reduction (95%) in manual testing efforts. Integrated the test scripts with **GitHub CI/CD Actions**, enabling automatic merging of pull requests upon successful completion of tests.
- Data Processing and Automation: Developed **Python scripts to automate the execution of audits** for a large volume of records (100,000+) in an energy simulation modeling software (Hot2000) while working with XML files.
- Business Intelligence: Collaborated with cross-functional teams to create an extensive **Power BI** report focusing on energy and emission-related data analysis for a Canadian province. The report involved in-depth visualizations and utilized various Power BI features such as **measures, columns, bookmarks, and DAX queries** to enhance interactivity and functionality.

### AstraZeneca Pvt. Ltd.

*Associate Engineer*

May 2018 – July 2021

*Chennai, India*

- Data Engineering: Leveraged **AWS S3** buckets for housing data in **parquet** format and employed **Azure Databricks** to proficiently transform and optimize data for enhanced analytics. Implemented automated data loads and transformations through **YAML-defined jobs**, accelerating data processing by 45%.
- Job Orchestration: Orchestrated a robust data pipeline encompassing diverse data layers using **Spark** and **automated data Extraction, Transformation and Load (ETL) jobs with Apache Airflow** while eliminating manual data deployment tasks by more than 70%.
- Intelligent Cubes Generation: Constructed **in-memory datasets** in MicroStrategy for dynamic aggregation and support for derived metrics which resulted in an improvement of 40% for the time taken to render data in the dashboards.
- Business Intelligence Development: Utilized **pass-through functions** and engineered dashboards with more than **300 Key Performance Indicators (KPIs)** to assist stakeholders in making informed business decisions and deriving business insights from both historical and real-time data in the order of millions of records.

- Devised a model to calculate optimal inventory volume that should be maintained in healthcare facilities thereby minimizing perishable equipment waste by at least 50%, leveraging **Economic Order Quantity** mathematical models and Machine Learning algorithms, including **Neural Networks**.
- Developed a web application for Healthcare personnel to maintain optimal inventory levels of perishable products with minimal human intervention, thereby reducing waste by at least 65 %.

## EDUCATION

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### **Master of Applied Computer Science**

**September 2021 – April 2023***Dalhousie University**Halifax, Canada*

Key Courses: Advanced topics in Software Development, Data Management, Warehousing and Analytics, Advanced Web Services, Serverless Data Processing, Process of Data Science and Advanced Topics in Computer Networks.

### **Bachelor of Technology - Information Technology**

**August 2014 – May 2018***Sri Venkateswara College of Engineering**Chennai, India*

Key Courses: Programming and Data Structures, Web Programming, Design and Analysis of Algorithms and Database Management Systems

## TECHNICAL SKILLS

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<b>Programming Languages:</b>	Python, Java and Kotlin
<b>Databases:</b>	SQL, NoSQL, Neo4j and VectorDB
<b>Cloud Services:</b>	Amazon Web Services, Google Cloud Platform and Databricks
<b>Web Technologies:</b>	ReactJS, Redux, Microservices, REST APIs, FastAPI, GraphQL and Kafka
<b>Version Control:</b>	GitHub, GitLab, Atlassian Bamboo and Bitbucket
<b>Workflow Management:</b>	Jira, GitHub Actions, Jenkins, Airflow and Confluence
<b>Deployment Platforms:</b>	DigitalOcean, Vercel, Kubernetes and Dockers
<b>Development Methodologies:</b>	SDLC, Agile, Test Driven Development and Design Patterns
<b>Business Intelligence:</b>	MicroStrategy, Power BI & IBM Cognos
<b>Test Frameworks:</b>	JUnit, Mockito, Pytest and Jest
<b>AI Frameworks:</b>	Tensorflow, Langchain and Streamlit

## PROJECTS

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### **Serverless Bed and Breakfast 🍳 | ReactJS, NodeJS, AWS and GCP**

**July 2022**

- A multi-cloud serverless application with room reservation, order management, chatbot, tour reservation and analytics features. Worked with **Google's Firestore (NoSQL)** for storing and retrieving data. Built with **AWS (Lambda, Lex, DynamoDB and Cognito)** & Google Cloud Platform (**Cloud Function, Pub/Sub, Firestore and Data Studio**).

### **Expense Tracker 📑 | ReactJS, NodeJS and AWS**

**July 2022**

- A web application with Group Expense Tracking, Payment Reminders, User management, In-App Payment Integration, and Analytics features. Developed **Rest APIs**, housed data on a **cloud database (Supabase)**, leveraged **Dockers** and deployed the application on **AWS Elastic Beanstalk**.

### **Distributed Database Management System 🗄️ | Java and Google Compute Engine,**

**June 2022**

- The project involves a comprehensive system that simulates the working of a real **distributed database** by employing **Google Compute Engine**. With a focus on scalability and reliability, this project provides a secure user authentication mechanism, ensures reliable transaction processing, manages logs for auditing purposes, facilitates data modeling and reverse engineering tasks, and provides analytics capabilities for deriving meaningful insights from the distributed data.

### **Trippy 🚗 | Spring Boot, MySQL, DesigniteJava and QScored**

**April 2022**

- A web application built using Spring Boot, MySQL and DesigniteJava for Ride sharing, Vehicle Management and Ride Bookings for two User Personas, namely, Vehicle Owner and Customers. Primary emphasis on **Git Continuous integration and Development (CI/CD)**, Test Driven Development and elimination of Code Smells.

## CERTIFICATIONS

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1. AWS Certified Developer – Associate. [**Issued October 2023**]
2. AWS Certified Solutions Architect – Associate. [**Issued April 2023**]
3. HashiCorp Certified: Terraform Associate (002). [**Issued February 2023**]
4. AWS Certified Cloud Practitioner. [**Issued October 2022**]