







# REVATHY PONNAMBALAM

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## EDUCATION

- Master's in data science, University of British Columbia, Vancouver, Canada** Sep 22-Jun 23
- Designed, deployed, and containerized various machine learning projects in the coursework. Learnt and applied concepts of hypothesis testing, A/B testing and statistical modelling in the coursework
- Master of Engineering in Transportation Engineering, College of Engineering, Anna University, India**
- Bachelor of Engineering in Geoinformatics/Geomatics, College of Engineering, Anna University, India**

## ACADEMIC PROJECTS | UBC

- Cleansat (Capstone project with Rio Tinto mining corporation)** May 23-Jun 23
- Deploying the machine learning pipeline to create cloud/shadow mask for the Sentinel-2 satellite images to improve the accuracy of mineral exploration. Developed the app in streamlit to present the results.
- Rainfall Prediction**  Apr 23
- Deployed the machine learning pipeline using Flask API with Spark instance in AWS to predict daily rainfall
- Building Permit Explorer**  Mar 23
- Built interactive dashboard for analyzing Building Permit of Vancouver dataset using R and deployed the app on shiny
- BhumiNGO**  Mar 23
- Built interactive dashboard for analyzing children/volunteer count using Dash, python and deployed the apps on Render
- EasyPhysics**  , **EasyPhysicsR**  Feb 23
- Built and published packages in Python and R that four functions to easily calculate four classic physics theories. This reduces 80% of a teacher's effort. Deployed these packages using CI/CD pipeline
- Cervical Cancer Prediction**  Dec 22
- Containerized the machine learning pipeline that predicts cervical cancer using Random Forest Classifier

## TECHNICAL EXPERIENCE

- Project Manager | a'xykno/Hitachi solutions, India** Oct 15-Jul 22
- Designed and developed GIS-based master plans, comprehensive mobility plans, and transport demand modeling for various central/state government projects, utilizing a data-driven approach.
  - Led JICA-funded projects, collaborating with the Hitachi team on "Vehicle Weight Estimation" and "Optimization of Public Transport" using automatic vehicle detection through stereo cameras and LiDAR increasing 30% revenue to the authority.
  - Employed geospatial data analysis techniques and models to improve the accuracy of vehicle weight estimation and optimize public transport routes, demonstrating expertise in project management, scoping, costing, and adherence to specifications for public sector projects as the Project Manager.
  - Developed and analyzed GIS thematic maps and maintained strong relationships with State/Central Government clients, regularly communicating and running meetings and workshops as needed
- GIS Development Trainee | Hitachi solutions, Japan** Aug 14-Feb 15
- Maintained data accuracy/integrity in Hitachi's proprietary GIS s/w, GeoMation, by managing the geospatial database in SDE.
  - Developed GIS/ITS prototypes to identify crop-cultivated areas, estimate crop yield, assess crop health, and map irrigated landscapes for agricultural land from the satellite imagery in Australia.
  - Coordinated pre-disaster planning and preparedness, prediction and early warning, and damage assessment and relief management for a GIS-based Disaster Management System/Emergency Response System for the Vietnam Government, utilizing analytical skills to develop GIS prototypes that provide decision-makers with a clear understanding of disaster situations.

## SKILLS

Programming Languages	Python, R, Java
Databases	MySQL, MongoDB, SQL, PostgreSQL, Microsoft SQL Server
Data Visualization	Shiny, Dash, Matplotlib, Plotly, PowerBI, Tableau
Data Science	Machine Learning, PyTorch, LLM, Recommendation System Natural Language Processing, Experimentation and Causal Inference, A/B Testing, Hypothesis Testing
Cloud and Big Data	Distributed systems, Hive, Spark, AWS - S3, Sagemaker, EC2, Google Cloud
S/w Development/Version control	Docker, CI/CD pipeline, Flask API, Databricks, Github, Gitlab
Geospatial /Transportation s/w	QGIS, ArcGIS, ERDAS, EMME2, VISUM, VISSIM, TransCAD

## ACHIEVEMENTS

- Women in Data Science Hackathon | Kaggle** Mar 23
- Used ensemble modelling along with PCA and clustering techniques to predict the longer-range weather forecasts to help people prepare and adapt to extreme weather events caused by climate change.

## EXTRA CURRICULARS

- Volunteer of DataCan, Women in Data Science community Feb 23-Present