



Nithin Somasekharan

Data Scientist

Experienced computational scientist with a demonstrated history of working in the oil & energy, healthcare and pharmaceuticals industry. Skilled in Data Science, Numerical techniques and Scientific computing. Experience in coding languages like C++/C and scripting using Python and MATLAB. Has also worked in web application development using Python Dash and React. Strong research background with Master's degree in Aerospace Engineering from Indian Institute of Science (IISc).



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SKILLS

Scikit learn, Tensor Flow, Keras, Numpy, Pandas

Machine Learning

Deep Learning

Python

R

SQL

Dash

React

Fast API

Kubernetes

Power BI

Mathematical Modeling

Numerical Methods

MATLAB

C/C++

OOPS

High Performance Computing

LANGUAGES

English

Native or Bilingual Proficiency

Malayalam

Native or Bilingual Proficiency

WORK EXPERIENCE

Data Scientist

Optum (UnitedHealth Group)

12/2021 - Present

Bengaluru

Healthcare and Pharmaceuticals

Achievements/Tasks

- Developed a predictive model data based model for finding the best time to contact customers. Used a four layered artificial neural network trained on customer behaviour and demographic data. Deployed and integrated the model predictions into the business process. Model effectiveness was evaluated using business data of connected contact attempts
- Developed a PoC for customer journey analytics to identify the pain points of the customers and clustering the customers based on their journey with the PBM. Deployed the PoC in GCP Kubernetes with front end developed in react and backend in Python interacting via FastAPI
- Used NLP to summarise notes from customer-agent interaction and identified most frequent complaints/pain-points
- Generated Ad-Hoc reports for business on a need basis

Computational Scientist

ExxonMobil

07/2019 - 12/2021

Bengaluru

Oil and Gas

Achievements/Tasks

- Developed a data driven model for predicting seismic wave velocities in rocks. Worked on 5000 data points with 35 features. Performed data cleaning and data validation to conform with physics. Used linear model, random forest regression, and support vector regression to fit the training data. Performed un-certainty analysis by using 10 models, fit using varying training sets (randomly sampled)
- Developed a valve failure prediction model. The failure time of a valve is predicted based on real time valve operating conditions data injected from PI database. Correlation is used to extract relevant features. Stacking algorithm involving XGBoost regression, Random Forest Regression and Ridge Regression is used to provide final prediction. Obtain test and train R2 value of 0.9 (approximately)
- Developed a random forest based classifier to predict sub-surface events using seismic wave velocity data.
- Developed a data based inversion method for calibration of mathematical models used in the in-house solvers. Artificial Neural Network and Gaussian Process Regression learning algorithms were used to train the model using simulation data. Inversion was done using non-gradient based optimization algorithms in Scipy (Python)

PERSONAL PROJECTS

Machine learning for heart disease prediction

- Used a random forest classifier (sci-kit learn) to develop a model that predicts if a person is susceptible to heart disease or not
- Used confusion matrix and ROC to evaluate the model
- Studied the feature importance using permutation importance, partial dependence plots and shap values

Implemented CART algorithm for decision tree in Python

Customer Churn Prediction Using Telecom Data (Kaggle)

INTERESTS

Data Science

Martial Arts

Football

Kaggle

EDUCATION

Master of Technology in Aerospace Engineering (CGPA 8.8/10.0) Indian Institute of Science

08/2017 - 05/2019

Courses

- Numerical Methods, Advanced Combustion, Heat Transfer, Turbulent Shear Flows.
- Thesis - Investigations in Supercritical CO2 flows

Bachelor of Technology in Aerospace Engineering (CGPA 9.7/10.0) Amrita University

08/2013 - 05/2017

HONOR AWARDS

Recipient of Scholarship from MHRD, Government of India, for pursuing Master of Technology at IISc

Name of the institution that issued/awarded it

Gold medalist at Amrita University, Department of Aerospace Engineering (2013-2017)

Name of the institution that issued/awarded it

CERTIFICATES

IBM Data Science Professional Certificate