

Jithin Madhusudanan Sreekala PhD

+1 608 640 2274

msjithin108@gmail.com

Walnut Creek, CA

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Summary

Result-driven software developer and PhD with 5+ years experience in C++ and Python. I am passionate finance and insurance industry and aim to apply my strong analytical skills to achieve business goals and data-driven insights and solutions by designing and developing software infrastructure.

Skills

Python | Dash | C++ | Agile SDLC | SQL | Docker | LaTeX | Git | Linux | Powershell | Numpy | Pandas | Streamlit | scikit-learn | threading | multiprocessing | Object-oriented design | Calculus | Differential equations | Regression | Time Series analysis | Monte Carlo techniques | PCA | Organizing and Analyzing Large Data Sets

Experience

Applied Underwriters Inc, Software Developer, CA, USA

Jan 2023 - Present

- Analyzing and maintaining applications and databases for insurance data using **SQL** and Visual Foxpro. Perform complex data migration, data interchange, reporting and analysis. Contributed to **OOP design** of code business application development in a fast-paced environment.
- Active contribution in writing and testing production code in automating processes for supporting accounting and analytics team. Developed object-oriented Foxpro and **Powershell** scripts to automate functionalities to legacy software and maintain compatibility reducing system downtime by 40%.

CERN, UW Madison, Graduate research assistant, Madison, WI

Jun 2018 - Dec 2022

- Analyzed petabytes of data by using efficient algorithms and different quantitative tools in **Python** and **C++** and using **bash** scripts. Managed data collection and ensured data quality for the analysis using **Linux** workflows resulting in a 25% improvement in data processing speed. An infrastructure in object-oriented C++ using inheritance and polymorphism was used to identify and analyze Higgs physics events.
- Maintained code for smooth automation of alert system and messaging for control system. Designed and deployed software updates for hardware interface to send alerts within seconds. Report status updates to supervisor and central managers in-charge of running the experiment.

Projects

Short-term stock price up-trend prediction using Blending ensemble learning

Dec 2023 - Jan 2024

- Developed a blending ensemble with base machine learning models which included RandomForest, Adaboost, Support Vectors to predict short term up trends in Intel stock price movement resulting in a 10% improvement in prediction accuracy compared to individual models.
- The modeling included stock price data, fundamentals, news data and technical indicators. Unsupervised learning Self-Organizing maps was used for feature extraction. achieving a 25% reduction in prediction errors and enhancing model robustness. Each base model had hyperparameters tuned and later the fit results from the models blended using XG-Boost. The model was backtesting showed up to a 30% improvement in overall model performance.

Tweet popularity using ML classification techniques

Oct 2021 - Dec 2021

- Creating a machine learning pipeline to predict the virality of a Twitter post and its subsequent relationship to flow to trading activity on stock price using tweets collected from Twitter API.
- Performed data collection, exploration, cleaning for 9 million tweets and used NLP techniques to extract sentiments. Used classification techniques and finalized Random Forest model to predict popularity of tweets attaining a precision of 85% and recall of 80%. . This project was recognized as one of the top 5 projects in the Fall 2021 bootcamp.

Certifications

Certificate in Quantitative Finance (CQF) by Fitch learning

Jun 2023 - Jan 2024

- Mathematical modeling, time series analysis, Value-at-Risk, practical projects on Monte Carlo simulations and ML such as Decision trees for case studies to apply the acquired knowledge to real-world financial problems.

JPMorgan Chase & Co. Quantitative Research Virtual Experience Program on Forage

Oct 2023

- Completed a simulation focused on quantitative research methods to investigate and analyze natural gas prices. Analyzed a book of loans to estimate a customer's probability of default.

Nvidia DLI Fundamentals of Accelerated Data Science - Nvidia

Mar 2022

- Built and executed GPU-accelerated data science workflows using the RAPIDS accelerated data science libraries. Application of GPU-accelerated machine learning algorithms to perform data analysis at scale.

Education

PhD University of Wisconsin-Madison, Physics

Aug 2016 to Dec 2022