

Dr. Sumit Singh

Curriculum Vitae

WORK EXPERIENCE

MAY 2019 – TILL DATE

Senior Data Scientist, Remote Job
Nestle, Switzerland

LSTM, VAR & VECM implementation for Price Prediction of commodities futures and energy prices. GBM & design of ensemble for selection from different models.

Impact: The prediction beats the benchmark 70%+ times as shown by back testing.

Coding and implementation of Mean Reversion for Price Risk Management for commodities futures in Python. Implementing it for energy as well.

Impact: Back Testing shows savings around 100m CHF per year.

JUN 2017 – JUL 2019

Senior Data Scientist, Telecom Analytics
Subex, Bangalore

Worked as a senior data scientist to create statistical modeling with a team. Main projects: Anomaly Analytics and Social Network Analytics using large scale telecom data. Used algorithms/ methods such as PCA, LSTM with Time Series to detect anomaly and minimize false positives.

Worked on diffusion modelling to create ideas for Social/Cell network analysis using networkx, pandas package in Python.

Project management work such as planning KRAs. Designing and conducting training on Statistical Learning, R and Python. Please click for the recording of one of the session.

JAN 2016 – MAY 2017

Manager, Fin Enterprise Analytics
Philips Innovation Campus, Bangalore

Projects: Working Capital Analytics, Factory P&L Analysis.

Methods Used: ML(Decision Tree, Random Forest, PCA, Cluster Analysis), ARIMA.

Impact - 10% reduction in locked working capital. Languages: SQL, R, Python.

AUG 2004 – APR 2008

Senior Software Engineer
Infosys Technologies Limited

Data Warehouse Software Engineer.
Languages/Tool : Teradata, Cognos.

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PH.D. THESIS WORK

MAY 2014 – JUNE 2015

Paper 3

Inventory Control of Perishable Inventory which can be converted into different forms

Desc: Multi-Period decision problem for convertible perishable products with stochastic demand (with different statistical distributions) and price in different periods. Techniques Used: Convex Optimization, News-vendor Model, Differential Calculus, Sensitivity analysis, Simulation in Python.

JUNE 2011 – APRIL 2014

Paper 1 and 2

Inventory Control of Two Stage Perishable Inventory

Desc: Stochastic Deterministic model for two stage perishable inventory (used in Airline, Auto mobile and PCB industry) control.

Techniques used: EOQ Model, discreet time Markov chain, Queueing Theory, Alternating Renewal Process and various statistical distributions.

Result: Closed form/Algorithmic solution to determine lot size, unit size and N policy of queuing.

Techniques Explored: Markov Decision Process, Multi-armed Bandit models, Dynamic Programming, Stochastic Programming, Other Machine Learning Algorithms.

COURSE WORK

JUNE 2008 – SEPTEMBER 2010

Specialised Courses in Quantitative Methods

Quantitative Methods and Statistics

The courses were: (a) Advanced Operations Research which included Integer and Dynamic Programming (b) Stochastic Processes (c) Multivariate Data Analysis (d) Intermediate Econometrics (e) Advanced Financial Derivatives (Stochastic Calculus) (f) Inventory Control (g) Economic Courses - Mathematics for Economists, Economics of Information, Game Theory.

EDUCATION

- 2008 – 2018 **Decision Science**
PHD IN DECISION SCIENCE
*Indian Institute of Management,
Bangalore*
- 2000 – 2004 **Mineral Engineering**
B.TECH
IIT(ISM), Dhanbad

TEACHING EXPERIENCE

- 2007-PRESENT **MBA Colleges/Educational
Institute, Bangalore/Pune**
*Machine Learning, Deep Learning,
Time Series, Econometrics,
R, Python, Pandas, Quantita-
tive Methods, Operations Man-
agement, Business Statistics,
Reasoning, Managerial Eco-
nomics*

COMMUNICATION SKILLS

- HINDI Native speaker
ENGLISH Oral: good – Written: good
GERMAN Level:A1

SOFTWARE SKILLS

- INTERMEDIATE Python, SQL, R, \LaTeX
BASIC LEVEL C++

EXTRACURRICULARS

- 1997 NTSE Scholar
EXAMS GMAT: 740/800. AIR IIT-JEE 2941