Manas Koppar

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY
Master of Engineering in Financial Engineering,**GPA: 3.6/4.0** **Expected December 2022**

Indian Institute of Technology Guwahati, Guwahati, India
Bachelor of Technology in Mathematics and Computing, **GPA: 3.5/4.0** **May 2018**

Selected Coursework: Financial Engineering with Stochastic Calculus, Investment and Portfolio Management, Optimization, Intro to Machine Learning, Data Structures and Algorithms, Probability and Random Processes, Scientific Computing, Monte Carlo Simulation

SKILLS

Technical: C++, Python, MATLAB, R, SQL

EXPERIENCE

Senior Software Engineer*, Samsung Research Institute Bangalore,* Bangalore, India **July 2018 to July 2021**

- I developed the RF (radio-frequency) module in C++ for the 5G Chipset (S21, S20 5G) launched in South Korea and the USA markets.
- I worked with the HQ team in South Korea on the 5G Software Development in C++ to resolve various issues like high-power consumption, crash issues, low throughput, low SINR (Signal to noise ratio), RF calibration failure, due to the sub-6(5G) implementation.

Financial Analyst Intern, *Wipro Limited,* Bangalore, India **May to July 2017**

- I worked on Markov models using a variable transition matrix to predict the order booking for the current quarter.
- I built an application in Python to forecast the order booking and acquired an accuracy of about 90% on predicting the current quarter. Also, estimated the probability of order booking being in the given range of any future date given the Order Booking of a particular day.

PROJECTS

Predicting the state of the market (IAQF) **Jan 2021 to Present**

- We developed a technique to predict (or determine) the state of the market: bear, bull, or static using the daily price series of the Russell 3000 and prove the validity of our approach by comparing a trading strategy based on the technique against a buy-and-hold method for the years 2018 to 2021.
- We used the Hidden Markov model and obtained a return of 212%, much more than the traditional buy and hold strategy, which yields 70% for 2018-2021.

Predicting-3-Pointer-Capabilities, *Cornell University* **Aug 2021 to Dec 2021**

- We devised a method to predict a player's three-point shooting accuracy. We also built a model to classify whether an NBA player will shoot three-pointers above a certain threshold percentage.
- We used various regression techniques like Linear, Ridge, and Random Forest to predict a player's three-point shooting accuracy. And for the classification, we used Logistic, Ensemble Methods, Decision Tree methods.
- We also used the neural nets, and it had the best validation mean square error of **0.638**, misclassification rate of **35.14%**
- This project could help many teams to sign players more efficiently.

A Stochastic Model for the political business cycle (team of 2), IIT Guwahati, India **Jun. 2017 to May. 2018**

- Extended the New Keynesian Phillips Curve model to the continuous-time stochastic set up with an Ornstein Uhlenbeck process & minimized relevant expected quadratic cost by solving the corresponding Hamilton–Jacobi–Bellman equation
- I performed the numerical analysis for the risk-neutral and risk-averse cases using MATLAB.

LEADERSHIP EXPERIENCE

Mentor, *Saathi - IIT Guwahati,* India **July 2016 to Apr 2017**

- Mentored a group of five freshmen for a year to help them in their academic and psychological growth.

ACHIEVEMENTS/INTERESTS/CERTIFICATE

- I secured a **99.9 percentile** among 1.3 million applicants for JEE (Entrance Exam for IITs).
- I won **Silver Medal** for two consecutive years in the inter-school Chess Competition.
- **Certificates: FRM Level 1, Machine Learning** (Stanford); **Neural Networks and Deep Learning** (Stanford)