Prabhuling Masoodi

prabhumasudi2022@gmail.com | Champaign, IL | (447) 902-1290 | LinkedIn

EDUCATION

Master of Science in ***Financial Engineering,*** **University of Illinois at Urbana-Champaign** **August 2022 – May 2024**
Coursework: *Time Series, ML, Statistics, Financial Derivatives, Stochastic Calculus, Algo Trading, Options Trading* ***GPA: 3.7/4.0***

Bachelor of Engineering in ***Computer Science,*** **Ramaiah Institute of Technology** **August 2015 – June 2019**
Coursework: *Algorithms, Data Structures, Operating Systems, Compiler Design, DBMS, Computer Networks, Deep Learning* ***GPA: 9.3/10.0***

SKILLS

Technical: C++, Python, Java, R, SQL, JavaScript, Matlab, Numpy, Pandas, Scikit-learn, PyTorch, TensorFlow, AWS, GCP, Model Validation.
Math: Linear Algebra, Calculus, Probability, Statistics, Differential Equations, Time series, Regression, Stochastic Calculus, Advanced Time Series.
Tools: WinDbg, Quant libraries, Databases, Git, Visual Studio, Pycharm, Eclipse, XCode, Gurobi, Excel, RStudio, BigQuery, VertexAI.

WORK EXPERIENCE

CME Group, ***Quant Analyst Intern*** | Chicago, IL, USA **May 2023 – October 2023**

- Achieved the **runner-up** position in the intern Codeup **algo trading hackathon**.
- **Large Trader Position Liquidation:** Optimization of **liquidation strategy** for **large trader position**. Analyzed **historical market data** for price and volume trends. Designed **ML models(logistic regression, decision trees, random forest, SVM, gradient boosting, and neural networks)** to predict **mid-price changes** during liquidation. Built **test harness** for market data simulation. Enhanced **proficiency in data analysis, market microstructure, order book dynamics, portfolio management, risk management, and market impact.**
- **Backtesting of Volatility-Based Option Trading Strategy:** Developed and backtested a profitable volatility-based options trading strategy for tech giants (Apple, Microsoft) using data from Jan 2020 to Dec 2021. Utilized **data analysis, difference analysis, strike price analysis, and risk management techniques**. Achieved **higher returns** compared to the **benchmark**, validated through metrics like **Standard Deviation** and **Sharpe ratio**. Proficient in **options trading, backtesting, risk management, statistical analysis, and financial modeling.**
- **Replication of "Time-Series Residual Momentum Strategies" by Saejoon Kim:** Tested **hypotheses** on **lookback periods, weighted portfolios,** and **return-weighted portfolios** using **R libraries** such as **quantmod, xts, quantstrat, fPortfolio, PerformanceAnalytics.** Utilized industry data from **Ken French's Data Library**, exploring alternative weighting schemes (**value-weighted, equal-risk contribution**). Analyzed findings, identified inconsistencies, and proposed future research areas, showcasing proficiency in **statistical analysis, hypothesis testing, and data handling**.
- Developed an **LSTM model** for predicting the **market type (bear, bull, neutral)** in the next second based on parameters such as **RSI, EMA, and SMA** extracted from previous seconds.

Trellix (*Formerly McAfee*), ***Software Engineer*** | Bangalore, India **July 2019 – July 2022**

- Played a key role in the **development and debugging** of **critical features** for the Endpoint Security product, with a focus on **Threat Prevention** (Exploit prevention), **Web Control** and **Firewall** (LAG Group). Utilized **C++, Python, and Java** for programming.
- Proficient in **C++** and **Python** development with over **3 years** of **hands-on** experience.
- Extensive expertise in **Joint Threat Intelligence, Exploit Preve**ntion, and **Security Rule implementation**.
- Acquired expertise in **Process Monitor** and debugging **process dump** using **WinDbg** for both **user-level** and **kernel-level**.
- Streamlined custom **deployment process** by automating through **Python** scripting, leading to a significant increase in **team efficiency**.
- Comprehensive proficiency spanning the **development, testing, and deployment** phases of **cybersecurity software** products.
- Proactively addressed and resolved various critical product performance issues, including **memory leaks, BSODs, system hangs, and crashes**, resulting in enhanced product **robustness**, significant **cost savings**, increased **customer retention**, and **acquisition**. **Recognized** by the **Director and SVP of Engineering** for outstanding contributions.
- **Collaborated** with **cross-functional** teams to resolve product issues, ensuring smooth **interaction** and **data exchange** between components.
- Experience building **REST APIs, Multithreaded programming, low-level C++** debugging and development.
- Assumed a **leadership role** and **mentored** two new team members, facilitating their seamless integration into the team and **contributing** to a successful product **release** in the quarter.

Trellix (*Formerly McAfee)*, *Software Engineer Intern* | Bangalore, India **February 2019 – July 2019**

- Spearheaded the **automation** of JTI build testing and analysis through the development of a **Python, SQLite3, and CSS-**based **framework**. Achieved a remarkable **60% increase** in tests run per iteration, while **significantly** reducing **effort** and **time** spent on analyzing the data.
- Attained a profound understanding of the **building and testing processes** involved in Joint Threat Intelligence (JTI) builds, as well as the **rules** defining product functionality.

PROJECTS

- **Option trading and Dynamic Hedging**: **Buying or selling of options** and **dynamically hedging** them over a **ten-day duration**. Worked on technical facets including **volatility analysis, option price acquisition, selection, adjustments**, and **strategy analysis**. Evaluated resulting **profit or loss,** identifying pivotal factors, demonstrating adeptness in **financial modeling** and **risk management**.
- ***Speech Enabled Visual Question Answering using LSTM and CNN with Real Time Image Capturing to assist the visually impaired***. Implemented a **Python-based** application interface enabling users to capture images, ask questions related to the images verbally, and receive responses in speech format. Utilized libraries such as **Keras, gTTS, Numpy, Pandas, Sklearn, and kivy**. Achieved **90.45% accuracy**.
- **Mini Projects:** Portfolio Optimization under parallel shifts in term structure, Pricing European and American options using Trinomial model, Pricing down-and-out continuous-barrier European Options, Optimal Consumption Policy, Value Iteration and Policy Iteration.