

# RISHAB TIRUPATHI

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## Education

### University of Illinois at Urbana-Champaign

*Expected December 2025*

*Master of Science in Applied Mathematics, Algorithms and Optimization*

*Overall GPA: 3.91/4.00*

**Graduate Coursework:** Statistical Learning, Computational Statistical Optimization, Algorithms and Models of Computation, Theory of Probability, Graph Theory, Combinatorial Mathematics, Optimization in Finance

### University of Illinois at Urbana-Champaign

*December 2023*

*Bachelor of Science in (Highest Distinction) Applied Mathematics, (Highest Distinction) Statistics*

*Overall GPA: 3.81/4.00*

**Undergraduate Coursework:** Algorithms and Computing, Linear Algebra, Statistics and Probability, Statistical Modelling, Statistical Analysis, Time Series Analysis, Time Series Machine Learning, Numerical Methods, Stochastic Processes, Linear Programming, Non-Linear Programming, Differential Equations

## Experience

### University of Illinois at Urbana-Champaign Mathematics Department

**Champaign, IL**

*Incoming Mathematics Graduate Teaching Assistant*

*August 2024*

### AGCO Corporation

**Champaign, IL**

*Data Analyst Intern*

*May 2024 – Present*

- ❖ Debugging and analyzing VBA code to streamline product code generation processes, and reducing reporting time by 93%
- ❖ Implementing HuggingFace machine learning modules for text translation of over 50 languages to english

### FrostDefense Envirotech

**Champaign, IL**

*Machine Learning Intern*

*January 2024 – May 2024*

- ❖ Performed data visualization and statistical analysis on temperature data of over 35,000 data points from 1924 to 2023, focusing on frost risk assessment and trend identification through Python
- ❖ Implemented machine learning and deep learning algorithms such as Random Forest and LSTM, to forecast temperature patterns and frost occurrence through time series data with 94% accuracy
- ❖ Developed an automation process in Python of downloading and aggregating data from multiple CSV files into a single dataset

### Chicago Blackhawks

**Chicago, IL**

*Analytics Intern, Business Strategy and Analytics Group*

*June 2023 - August 2023*

- ❖ Implemented and designed SQL and DBT data models of over 1 million ticketing records to support ticket operation analyses and reporting
- ❖ Formulated hypotheses, performed tests, synthesized insights, and effectively delivered recommendations through narratives and presentations to senior leadership
- ❖ Created Python machine learning models to accurately predict future ticket sales and revenue for the upcoming NHL seasons
- ❖ Developed 4 Tableau dashboards for the ticketing department to make data-driven decisions on ticket pricing and sales

### Singapore Armed Forces

**Singapore**

*Platoon Commander, 30 SCE*

*June 2018 - July 2020*

- ❖ Commissioned as a Lieutenant in the Singapore Army and led a platoon of 15 combat engineers in engineering tactics, techniques, and army fundamentals
- ❖ Engaged in various modules taught by experienced senior leadership on personnel management, leadership, and soldier fundamentals
- ❖ Obtained a Band-1 rating of 89% for the first-year army-wide evaluation, and received Battalion Commander's Coin

## Projects

### World Health Organization Life Expectancy Predictor

- ❖ Developed classification and regression models on a World Health Organization dataset to predict Life Expectancy, focusing on Logistic Regression and Random Forest in Python and R
- ❖ Conducted correlation analysis to identify key variables, achieving a classification accuracy of 94.4%
- ❖ Improved model performance by trimming predictors, scaling inputs, and utilizing Random Forest models, resulting 98.3% accuracy

### Monopoly Board Game Simulator

- ❖ Created a Monopoly board game simulator through Python and Matplotlib to determine optimal playing strategies under different scenarios
- ❖ Implemented Python data visualizations to conduct data analysis on property value and return on investment based on the simulations
- ❖ Determined after 100 iterations of 1000 turn games, the ideal properties to buy based on a variable number of players

## Skills

Programming Languages: Git, Python, R, SQL, Visual Basic

Software: DBT, Microsoft Excel, Snowflake, Tableau (BI)

Python Libraries: Keras, Matplotlib, NumPy, pandas, scikit-learn, SciPy, seaborn, statsmodels, TensorFlow

R Libraries: dplyr, ggplot2, tidyverse, tsa