Data Science in Himalayan Mountaineering

Application of Data Science in Improving the Summit Success Rate of Himalayas: Analysing Key Factors for Climbers' Success

Zihan Yin

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01 Project Description

Objectives

- Identify and quantify key factors influencing summit success using data science, offering targeted advice for climbers.
- Raise climbers' awareness of potential risks and suggest effective strategies to reduce the risk of injury or death.

02 Business Model

The project results may have potential or direct impact on the these areas:

- Mountaineering expeditions in the Himalayan region
- Mountaineering equipment development
- Academic research on high altitude activities
- Insurance product design, etc.

03 Data Characteristics

The 4 datasets comes from **The Himalayan Dtabase**.

Datasets	#Rows	#Columns	Size	Change Velocity
Peaks records	479	25	112 KB	Unknown
Expedition records	11,184	66	5773 KB	278 expeditions were recorded in 2022.
Member records	85,336	78	34226 KB	3,290 members were recorded in 2022.
Literature records	15,586	13	1919 KB	Unknown

04 Data Analysis Methods

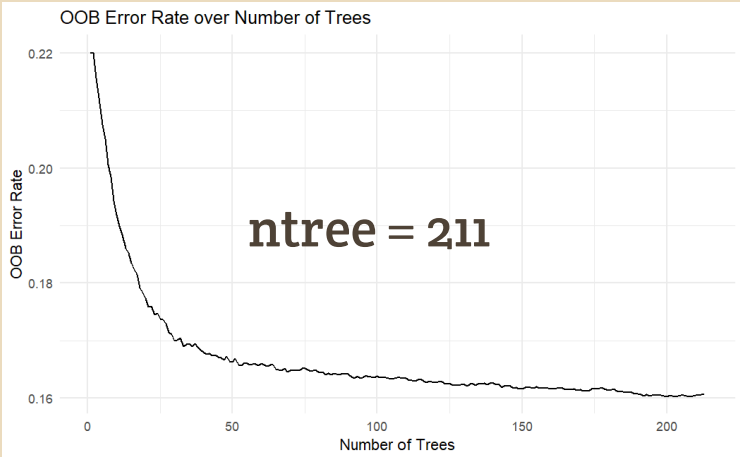
Data Pre-processing

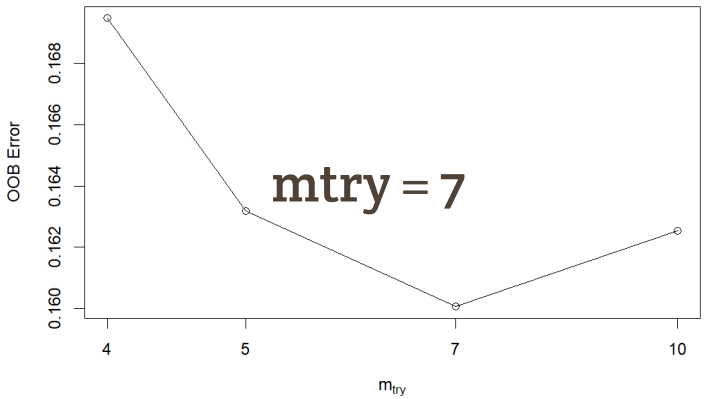
Random Forest Model

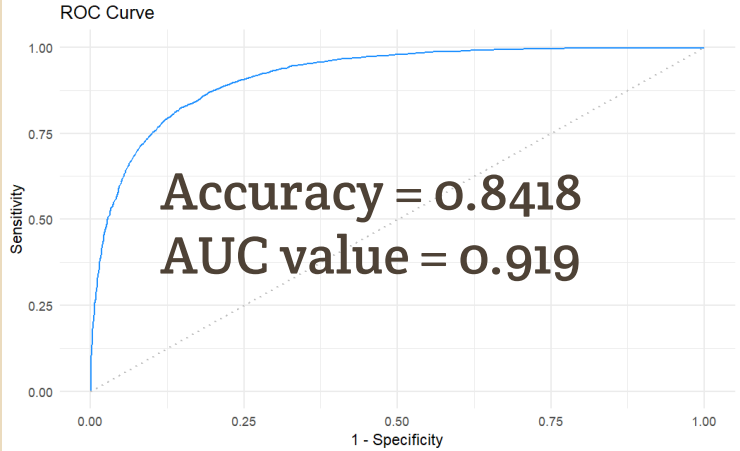
- Reasons
- Model Parameter Tuning
- Performance Evaluation

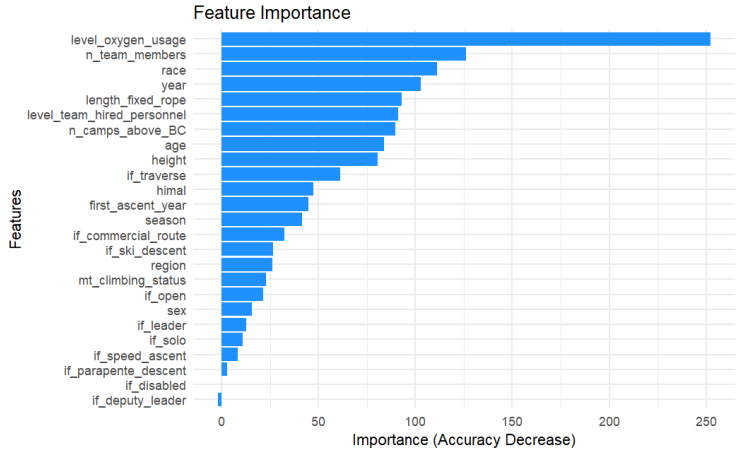
Feature Visualization

05 Demonstration









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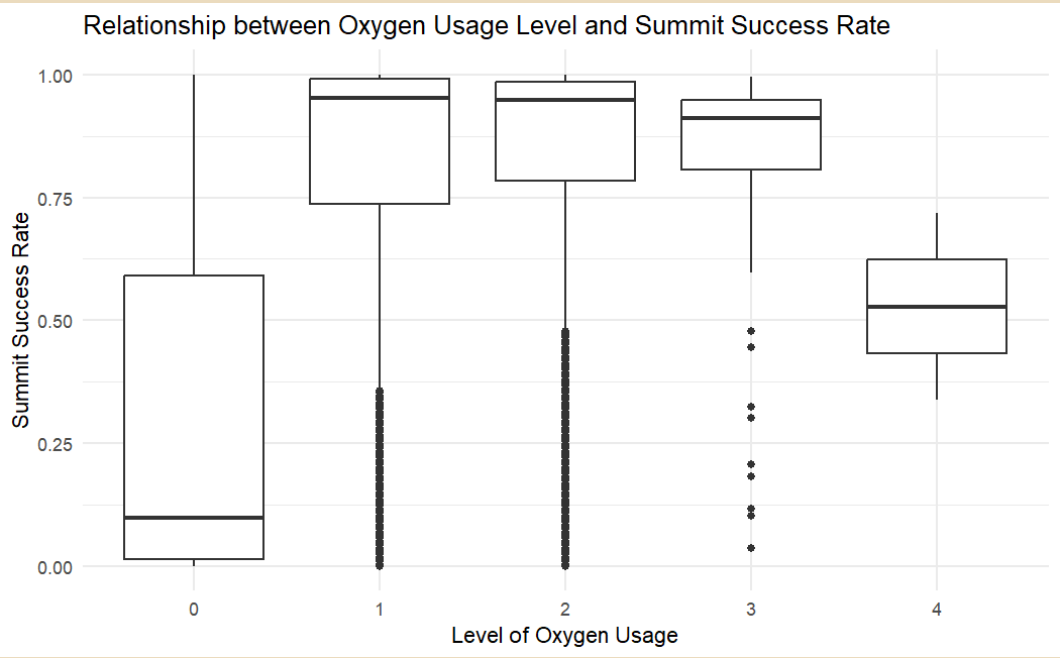

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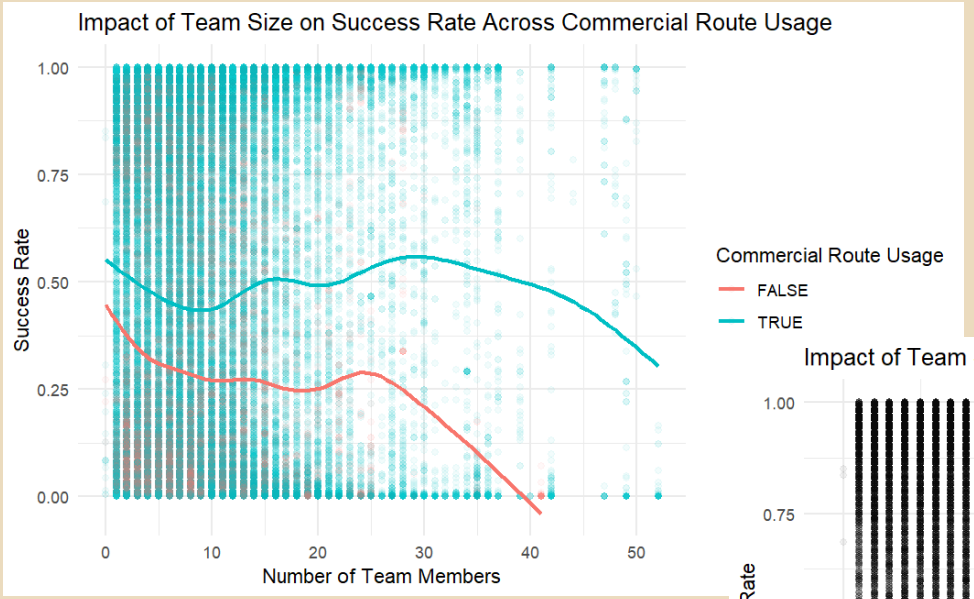

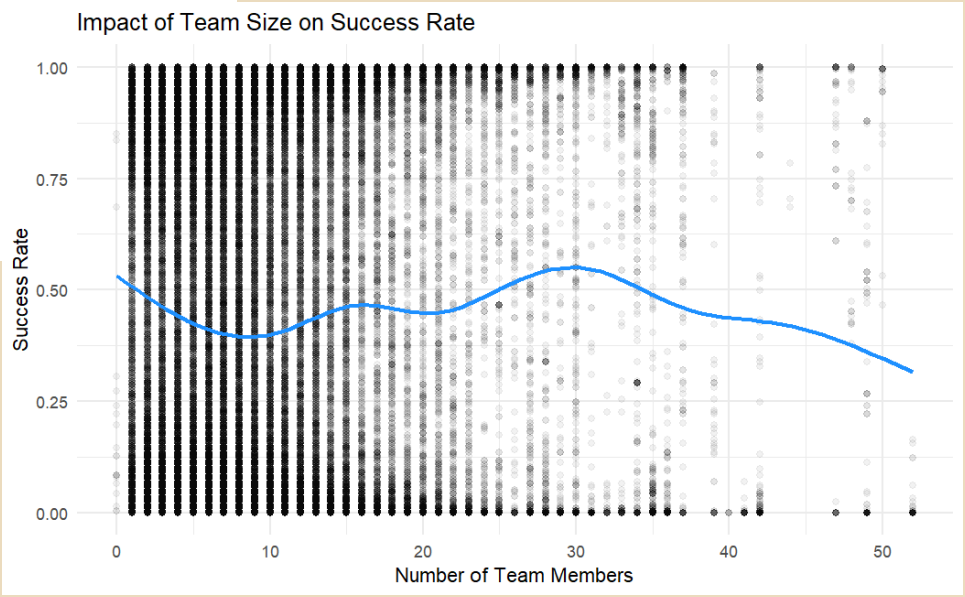

06 Standard, Data Governance & Management