2022-2 HR Project

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HR Team 1

Yunho

PPT Making

Statistical Modelling

Ridho

Data Analysis

Data Modelling

Hansung

Team Managing

Data Modelling

Seungyeon

Report Planning

Report Writing

Kyeongmin

Report Writing

Story Telling

Main Goal

Is it Possible to Predict Promotion?

Mission of
HR Team 1

What Kind of Features Are For Promotions?

HR Management contributes Greatly to Growth of Company

→ When Task Transfer is Needed,

- Systemic Learning Opportunities Will be Available

- Acquire Job-Required Skills, Knowledge and Info

- Improve Employees' Ability Level and Organizational Performance

Data

78,298

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Employees

Data

Variables

Department

Region

Education

Gender

Recruit Channel

Awards Won

No of Trainings and AVG Scores

Age

Previous Ratings

Service Length

Performance

Promoted

Data

Processing

STAGE 01
Removing
N/As

STAGE 02
Change
Types

STAGE 03
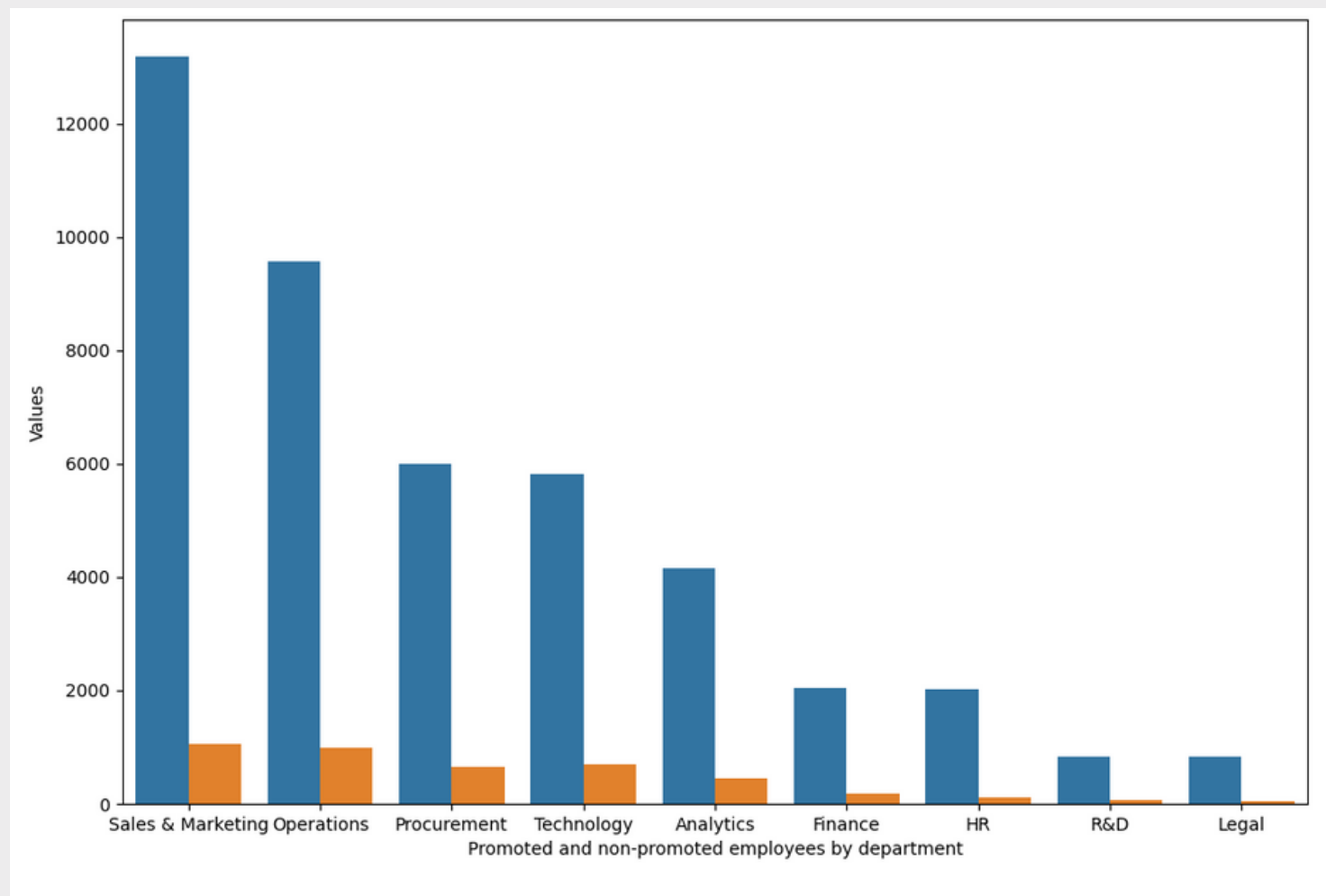Drop Unnecessary
Columns

STAGE 04
Make Dummy
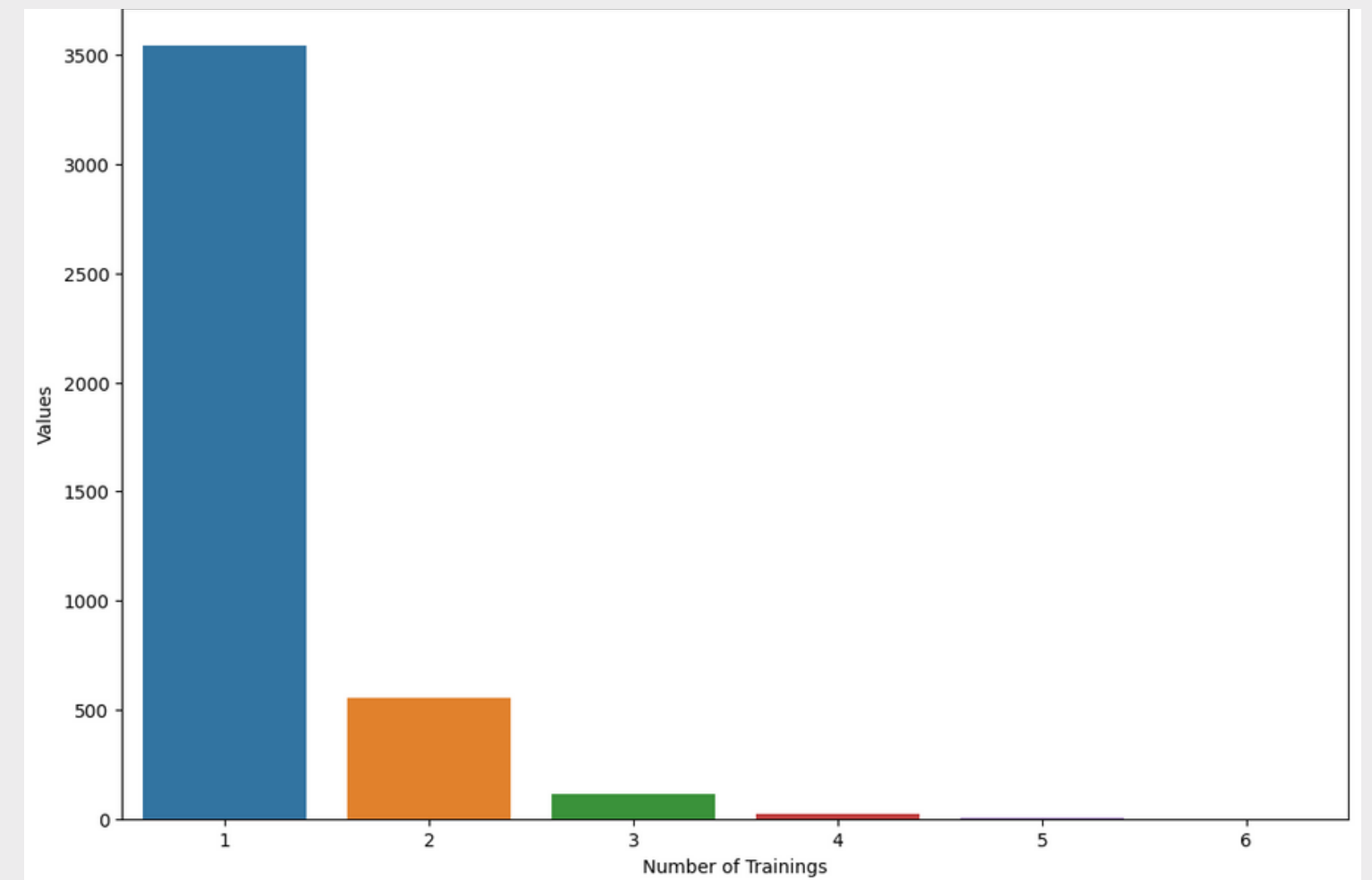Variables

STAGE 05
Split Data into
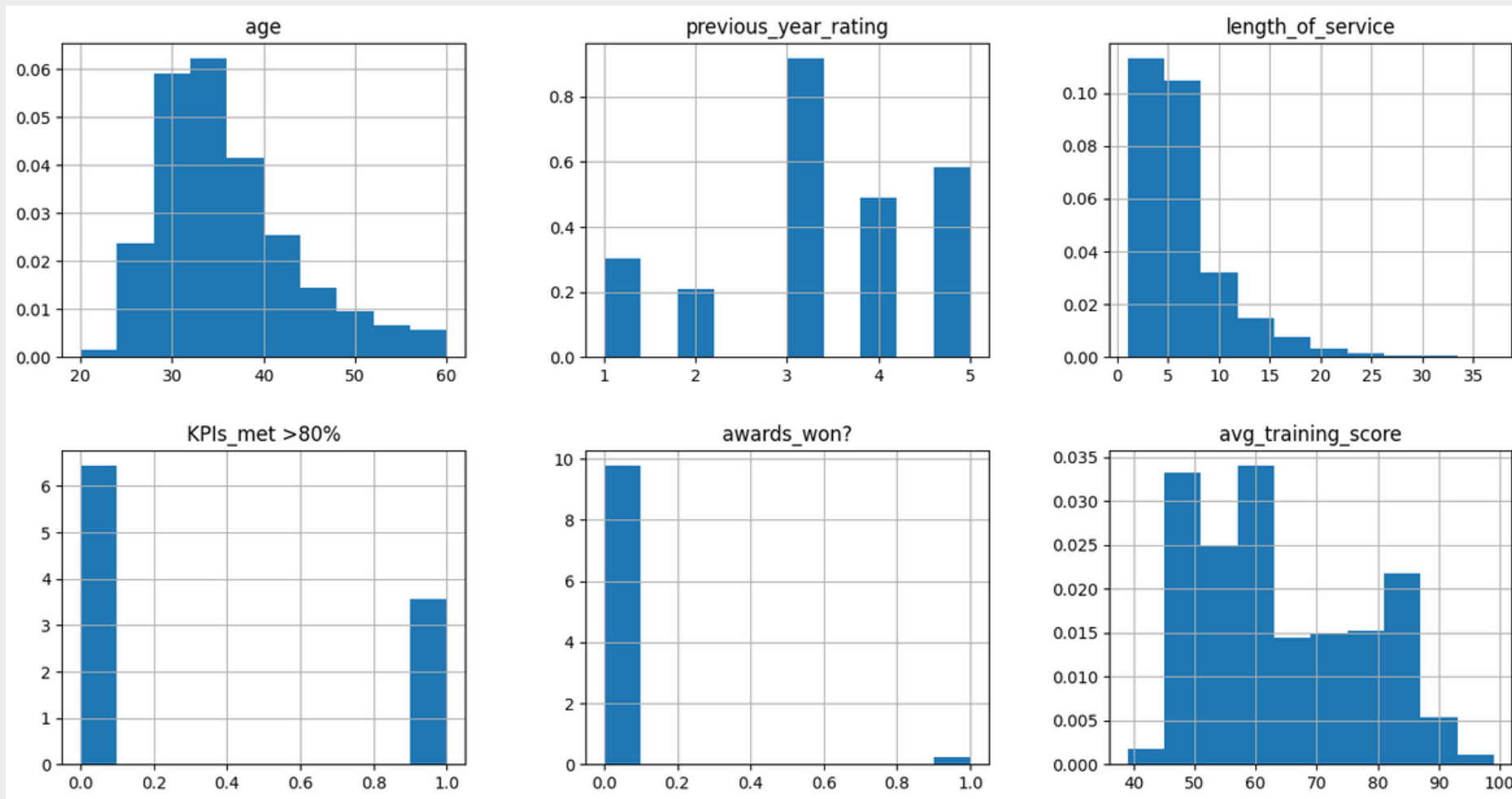Train and Test

Analysis

Visualization

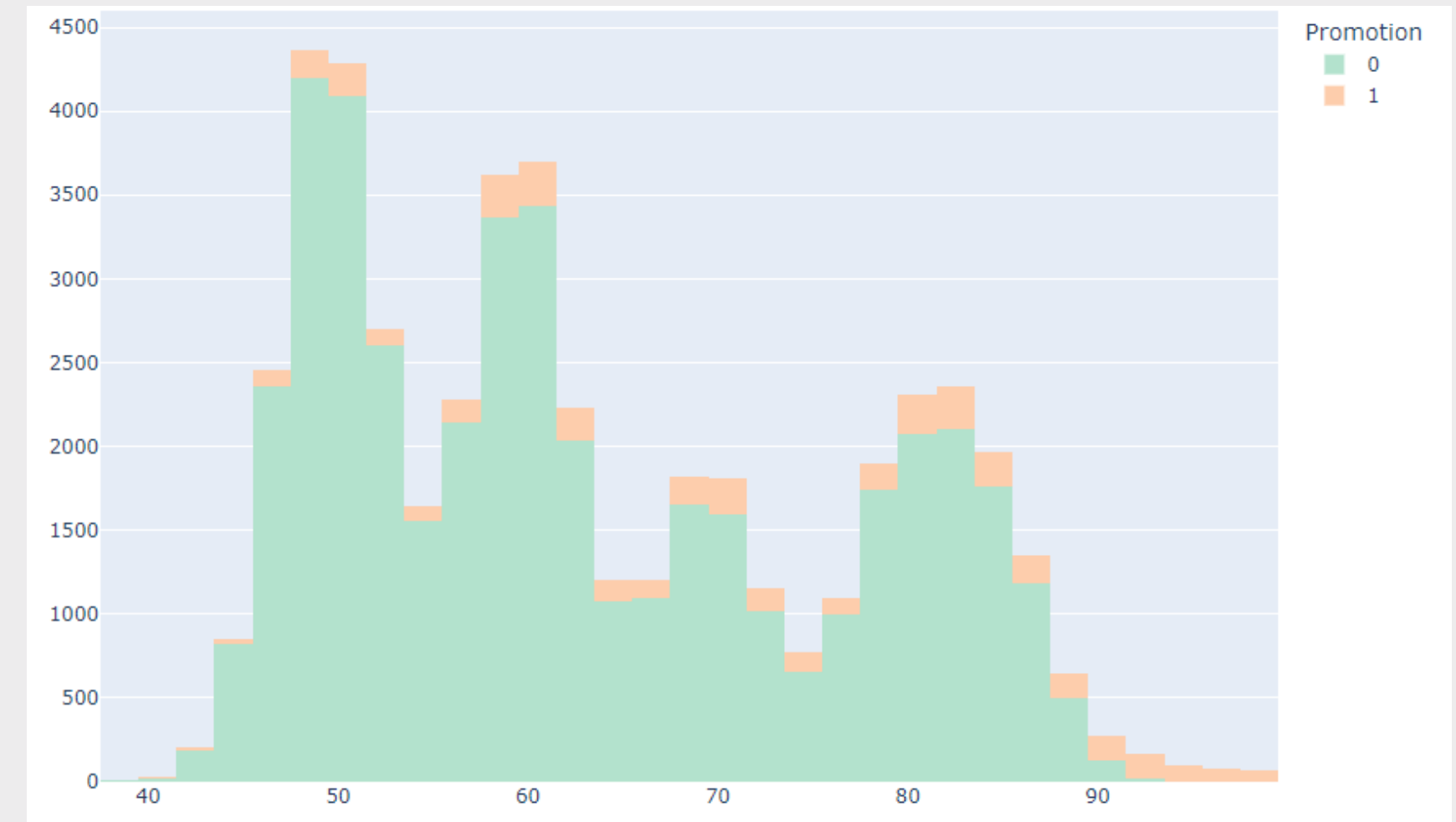Promoted 🟧 and Not-Promoted 🟦 Employees by Department

Employees Promoted by Number of Previous Trainings

Analysis

## Visualization

Histograms of Some Variables

Distribution Number of Years

: Not Promoted

: Promoted

ML Analysis

	Logistic Regression	Decision Tree	Random Forest ⭐	Best Score
Accuracy	0.916502	0.893835	0.932244	Random Forest
Precision	0.669536	0.402160	0.754403	Random Forest
Recall	0.078924	0.453680	0.327502	Decision Tree
F1 Score	0.141072	0.426346	0.456713	Random Forest
AUC ROC	0.537605	0.694721	0.658676	Decision Tree

Random Forest
In Test Set
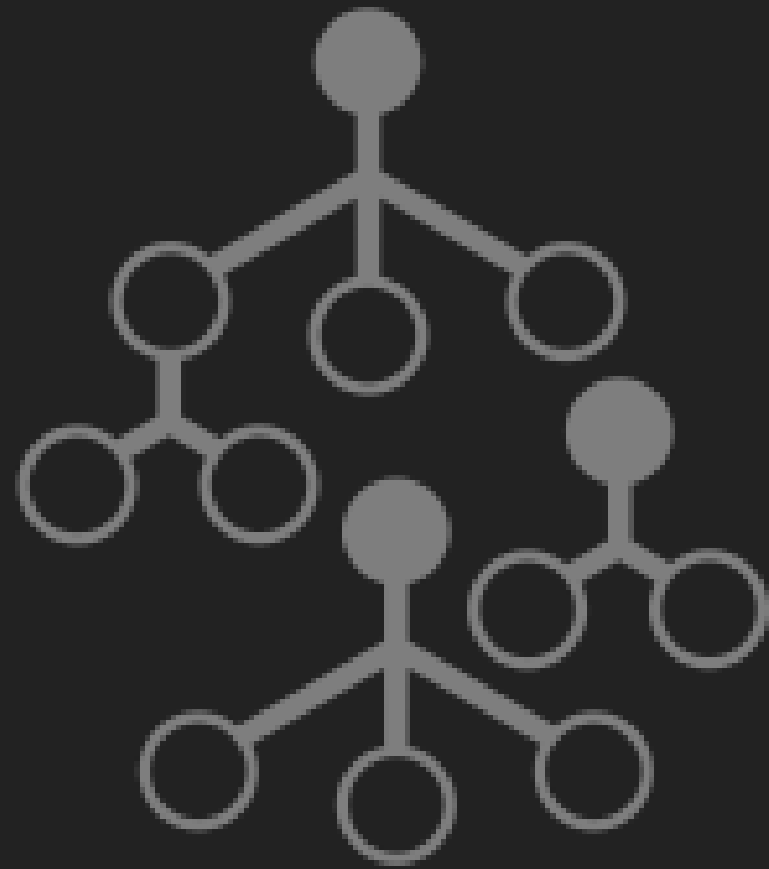
The Random Forest Model Predicted **787** Employees out of **1,043** Who got actually Promoted

Implication:
Expected Opportunities

- Assist promotion decision making

- Consideration of job or role diversity.

- Establishing fair and standardized promotion system.

- HR feedback reasons(indicators) on unpromoted employees

  -> promote individual development and motivation

  -> higher efficiency and productivity of organization

Implication: Limitations

What could be other features that may affect promotion?

→ current position

department performance

leadership

performance indicator divided in specific criteria

Who makes the final decision?

→ The function of prediction models is to assist decision making.

Senior Executives may not use the model all the time.

Conclusion

References

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Thanks for your attention!