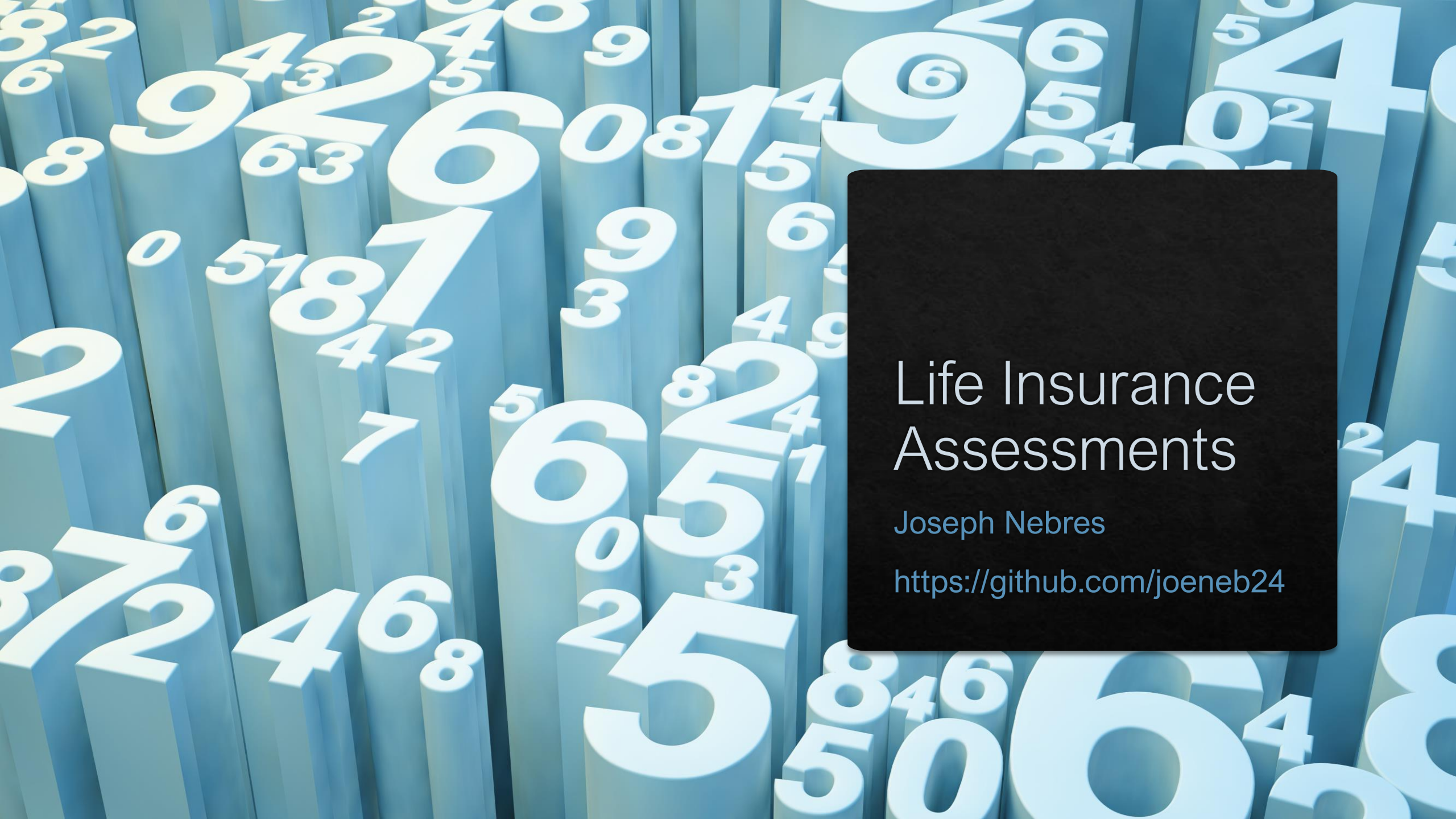


Life Insurance Assessments

Joseph Nebres

https://github.com/joeneb24

Presentation Overview

Target/Prediction

Life Insurance Assessment

Underwriting

Response

Visuals

Explanatory

Exploratory

Summary

Key Points

Takeaways

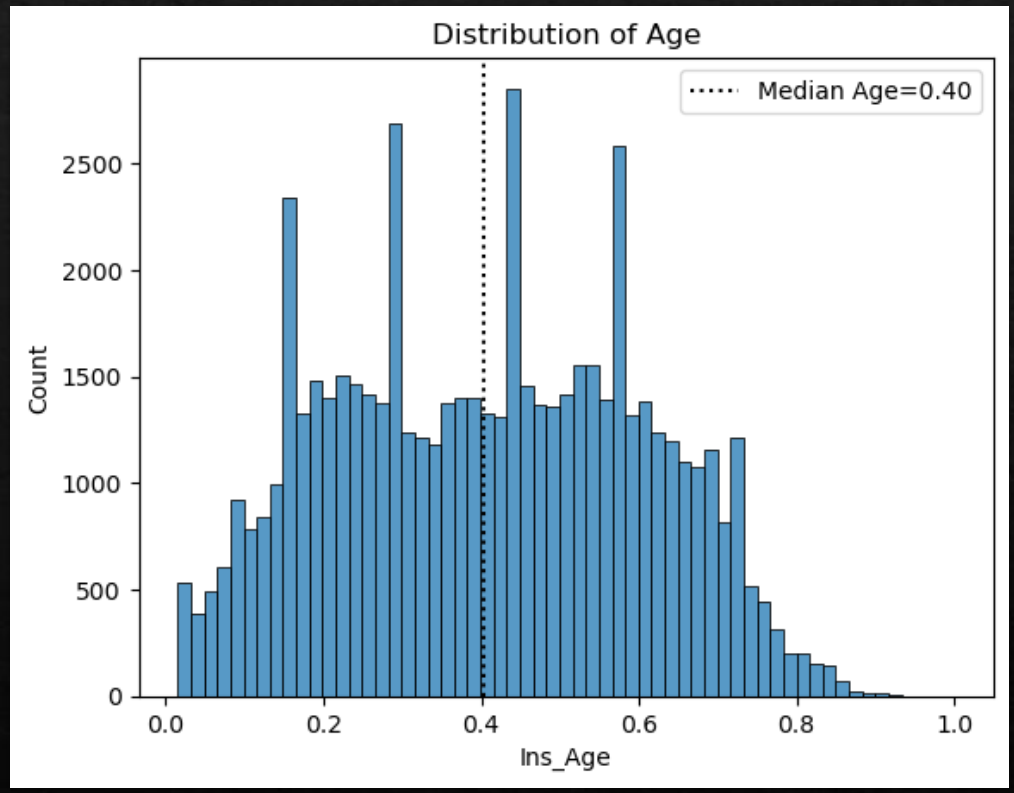
Recommendations

Target

- Response
- Major Considerations
  - Health
  - Insurance Policy
  - Risks
  - Moral vs Morale

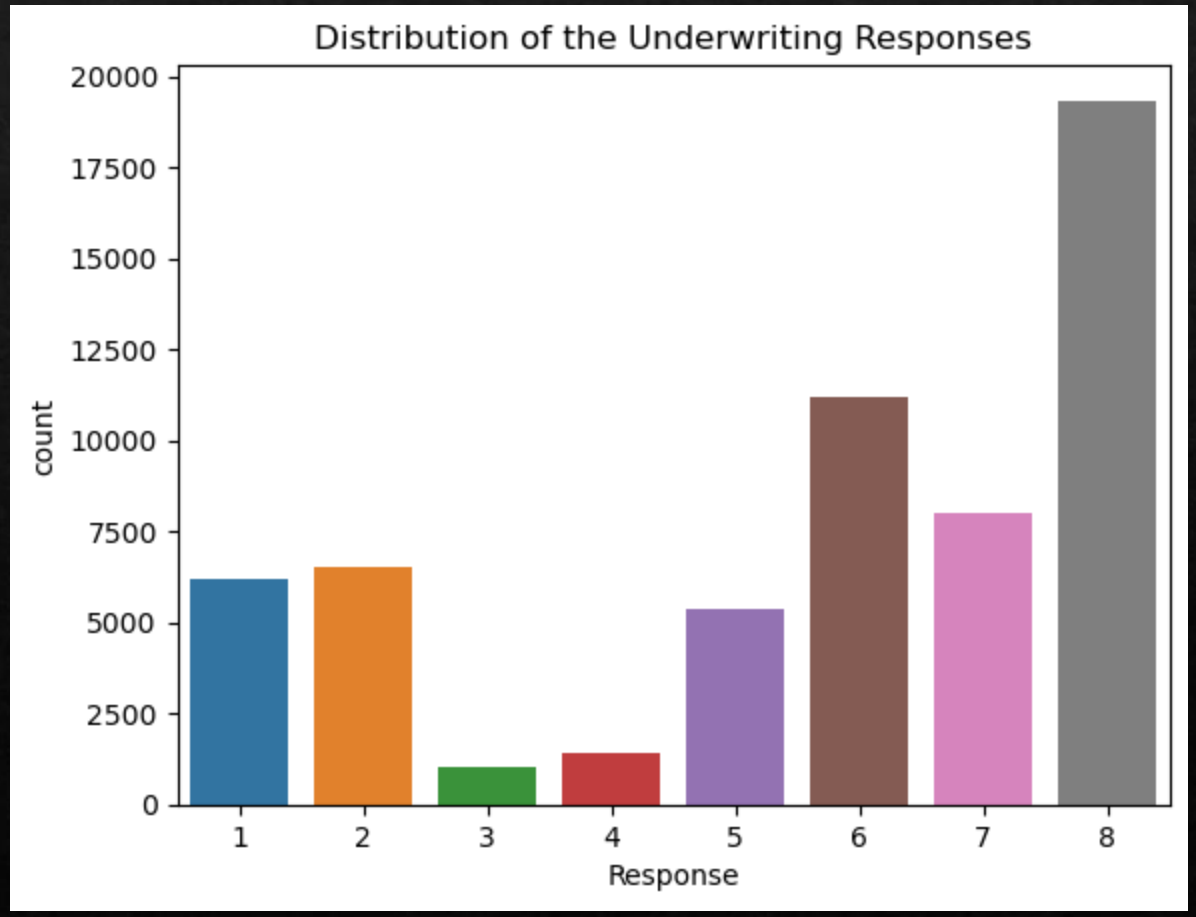
Exploratory: Age Distribution

- Health & Age Effect Policy Premium
- Explanation: Numerical Values are normalized
- Kaggle Competition



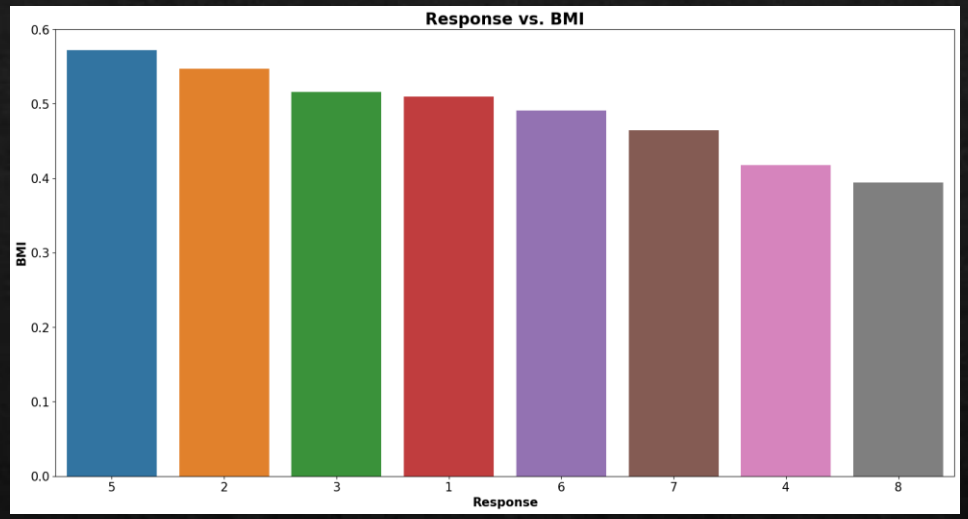
Exploratory: Underwriting Responses

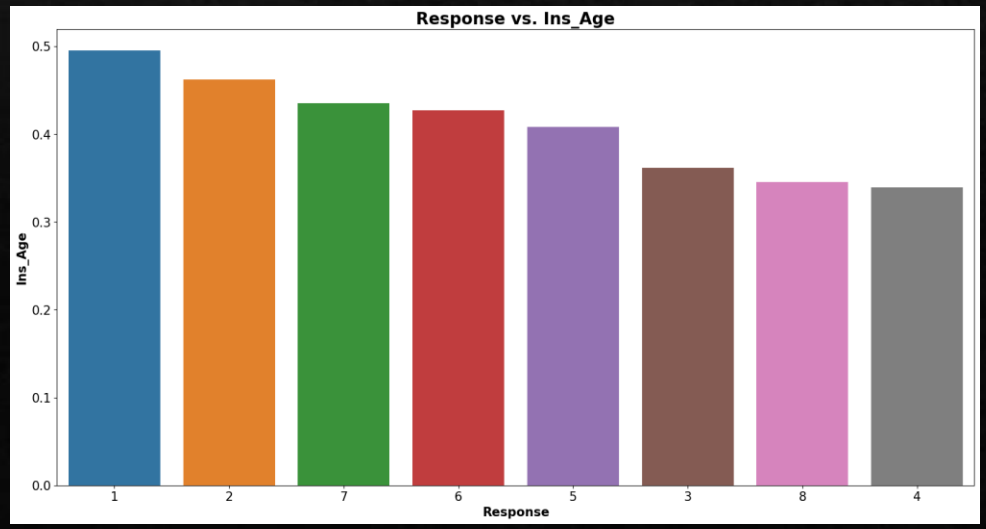
- Large distribution of Responses
- Some Responses had fewer counts



Explanatory

- Relationships between BMI and Age
- Underwriting responses depend both on BMI and Age





The Numbers

- Random Forest Models:
- Untuned, No Feature Engineering
  - Test Accuracy Score : 0.46084072294049955
  - Time to evaluate: 14.4 sec
- Untuned, with Feature Engineering
  - Test Accuracy Score : 0.46084072294049955
  - Time to evaluate: 15.5 sec
- Tuned, No Feature Engineering
  - Test Accuracy Score : 0.39010356731875717
  - Time to evaluate: 1 min 31.1 sec
- Tuned, with Feature Engineering
  - Test Accuracy Score : 0.39010356731875717
  - Time to evaluate: 1 min 31.3 sec

- Decision Tree Models:
- Untuned, No Feature Engineering
  - Test Accuracy Score : 0.3389291274622622
  - Time to evaluate: 2.5 sec
- Untuned, with Feature Engineering
  - Test Accuracy Score : 0.3389291274622622
  - Time to evaluate: 2.5 sec
- Tuned, No Feature Engineering
  - Test Accuracy Score : 0.4546131456034658
  - Time to evaluate: 1 min 42.7 secs
- Tuned, with Feature Engineering
  - Test Accuracy Score : 0.4546131456034658
  - Time to evaluate: 1 min 39.2 seconds

Better Model?

No!

Summary

- Key Insights
  - Age vs. BMI
- Final Recommendation
  - Should we use these models?
- Reflection
  - What are we going to do next?