

**MICHIGAN STATE**  

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**UNIVERSITY**

# Alpha Presentation

## Predictive Claims Scoring

### The Capstone Experience

### Team Roosevelt Innovations Data Science

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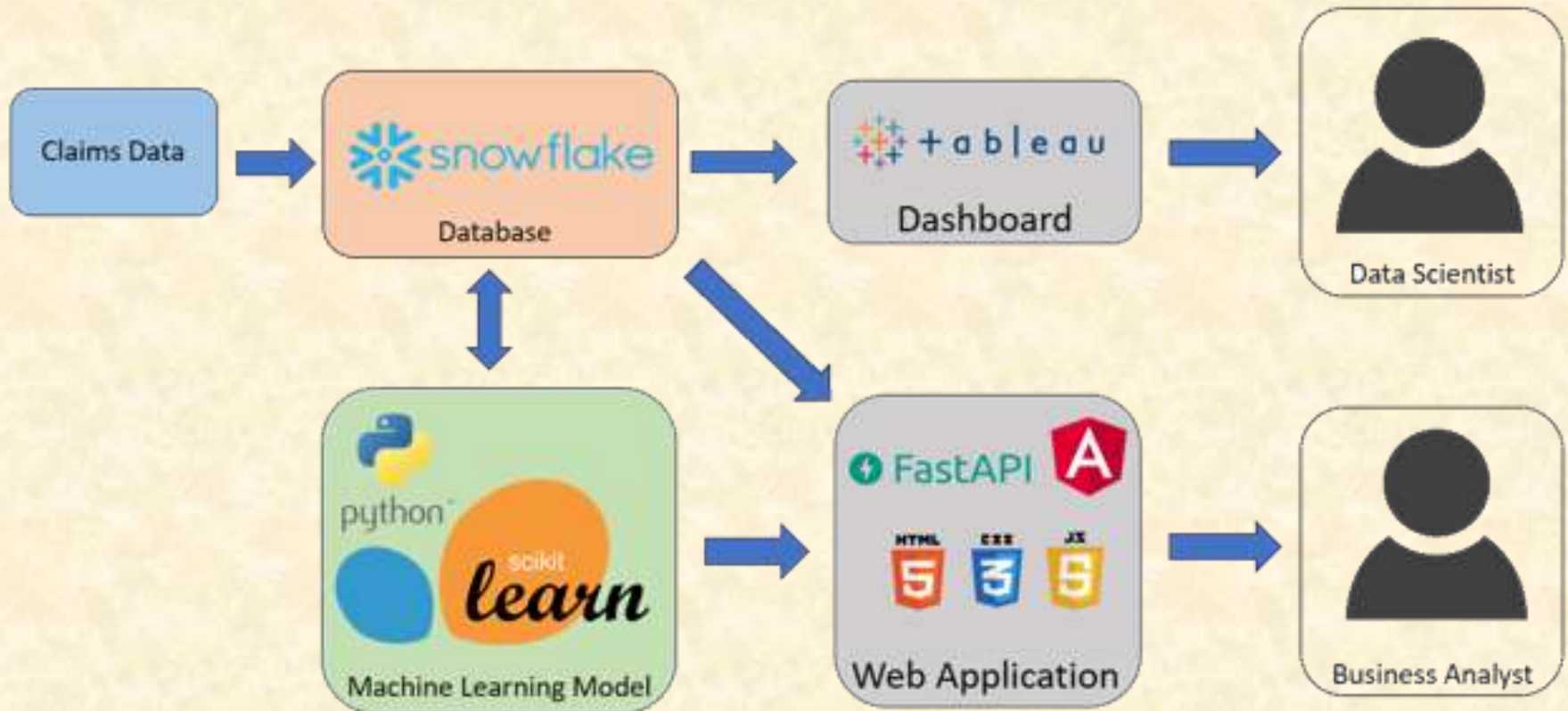
*From Students...  
...to Professionals*

# Project Overview

- Reviewing dental insurance claim models is a time-consuming process.
- Predictive Claims Scoring accelerates claim reviewal by identifying patterns in denied claims.
- A machine learning model scores every claim on its likelihood of FWA.
- A web application gives a business persona a user-friendly way to search for claim scores and metrics.
- Tableau dashboards give a data science persona metrics of the model.



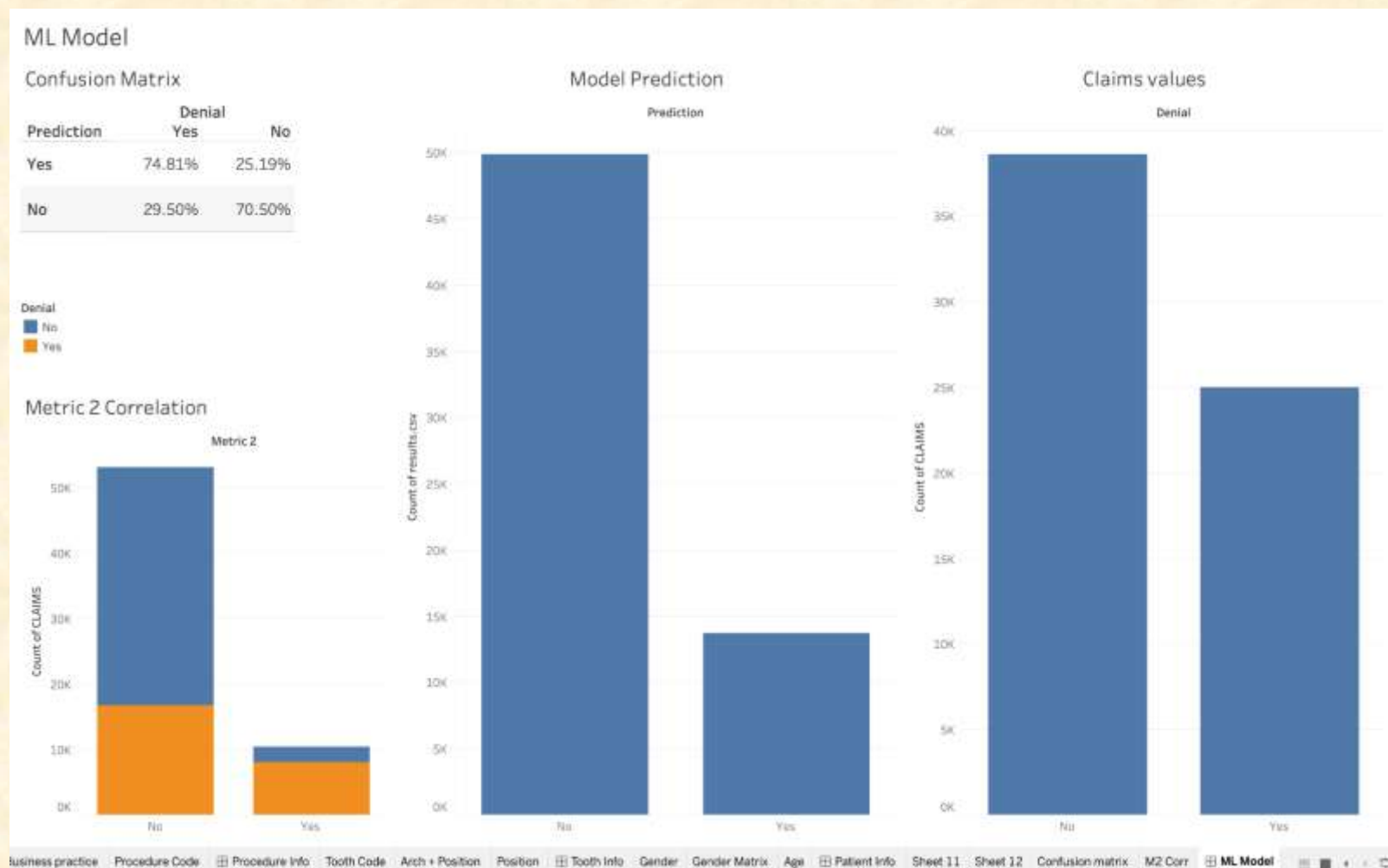
# System Architecture



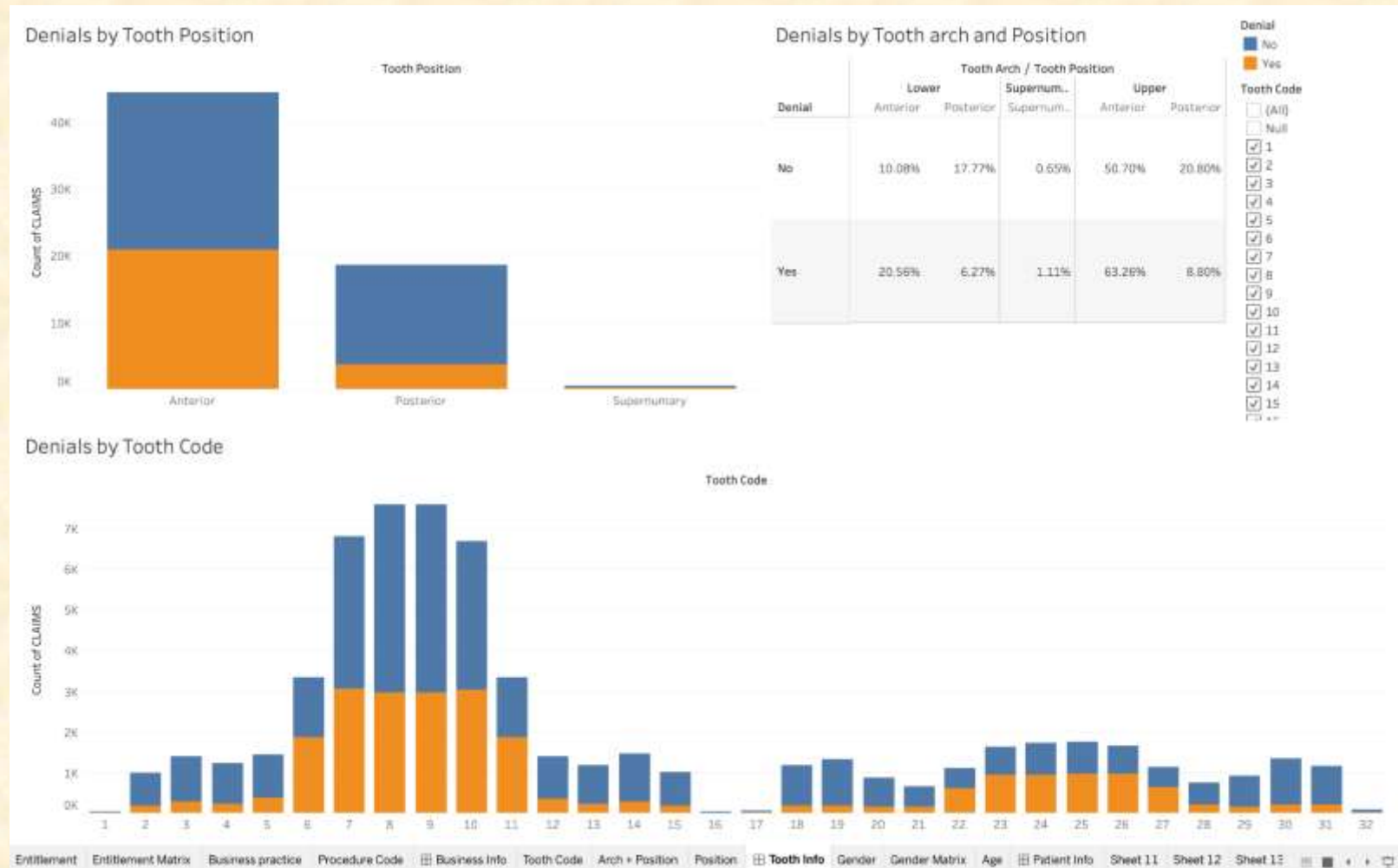
# Dashboard 1



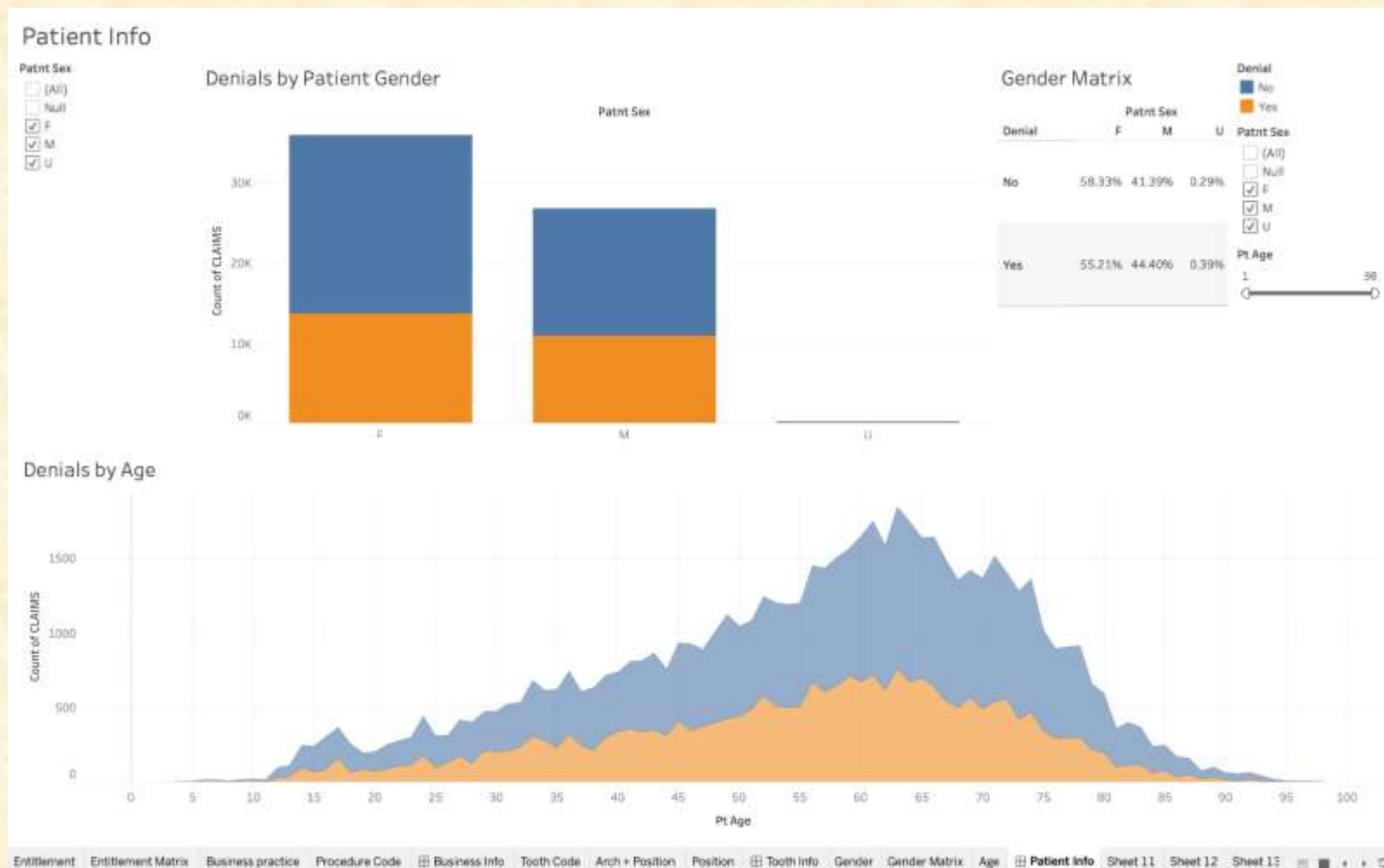
# Dashboard 2



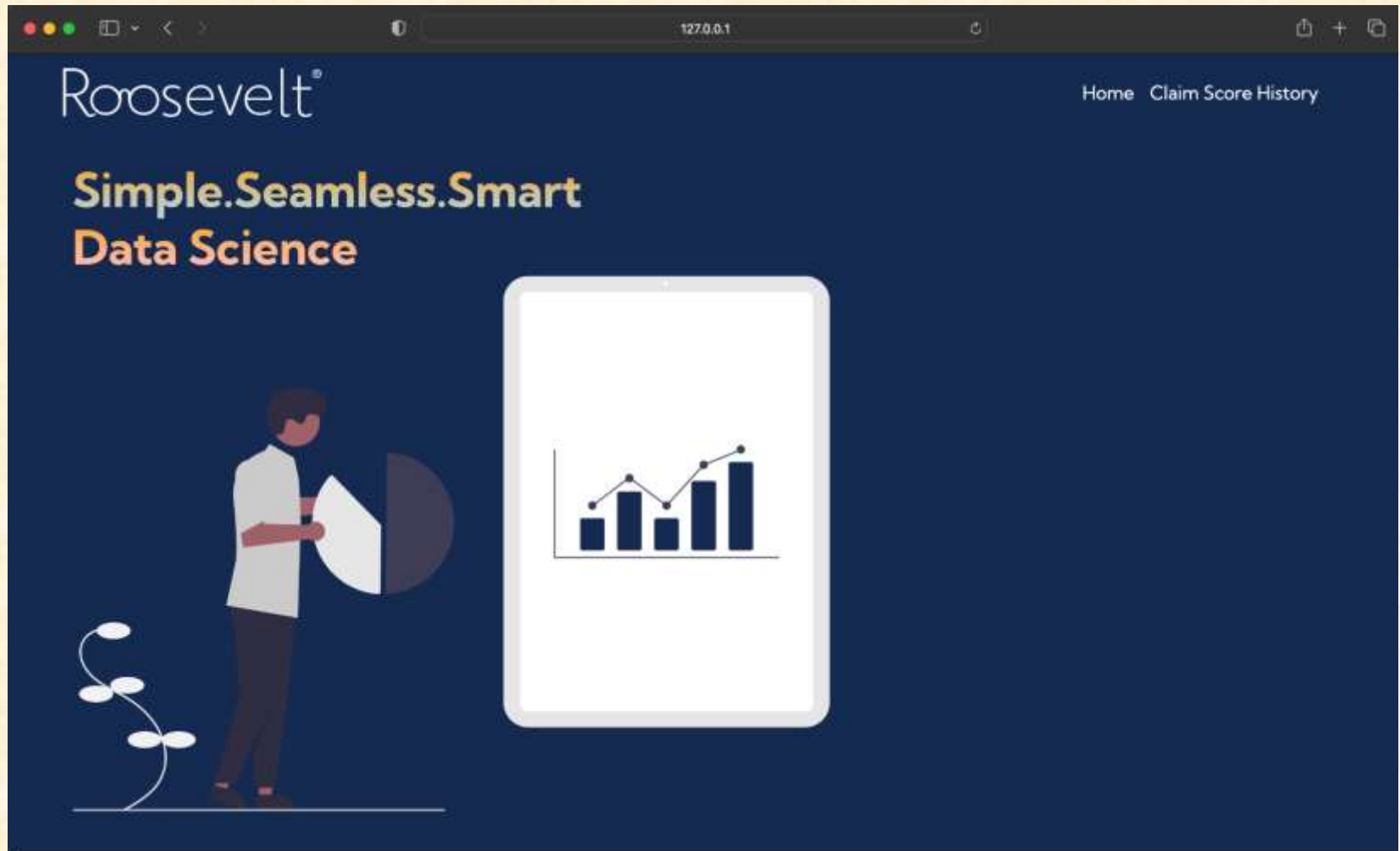
# Dashboard 3



# Dashboard 4

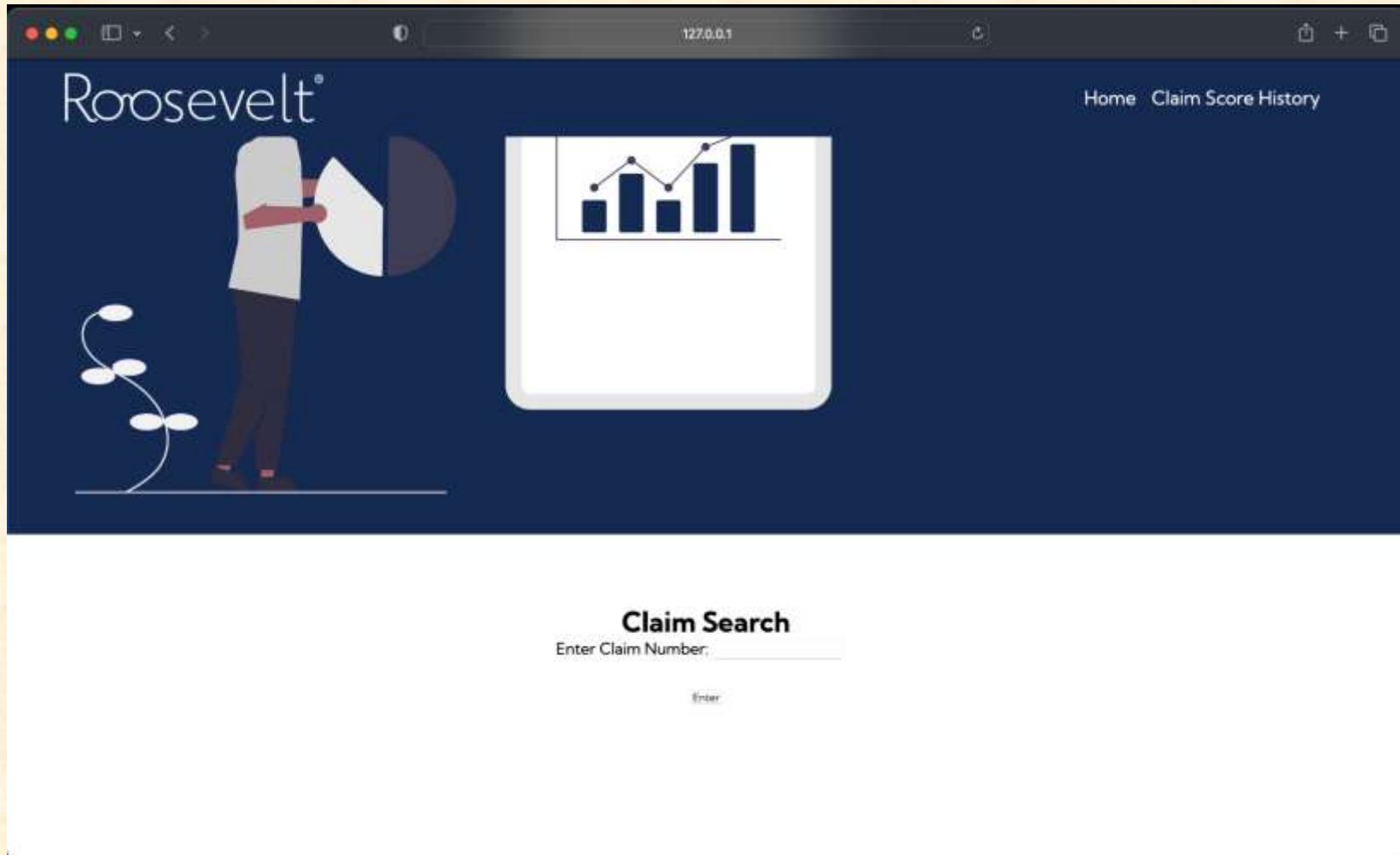


# Screen Mockup: Web App 1





# Screen Mockup: Web App 2



# Screen Mockup: Web App 3

The screenshot displays a web application interface for Roosevelt. The header includes the Roosevelt logo and navigation links for Home, Claim Results, and All Claim Metrics. The main content area features a table with the following data:

Claim Number	Denial	Entitlement Type	State	Gender	Age	Date Received
1	No	Medicaid	MI	F	19	2/18/2022

Below the table, there is a section for FWA Likelihood, which is currently set to 37.671%.



# Screen Mockup: Web App 4

The screenshot displays a web application interface. At the top, there is a dark blue header with the 'Roosevelt' logo on the left and navigation links 'Home' and 'Claim Results' on the right. Below the header is a table with two columns: 'Claim Index' and 'FWA Likelihood'. The table contains 18 rows of data. To the right of the table, there is a white box with a black border containing the text 'Model Accuracy: 72%'. The browser's address bar shows '127.0.0.1' and the page title is 'Table Data'.

Claim Index	FWA Likelihood
1	37.671%
2	16.766%
3	12.179%
4	25.169%
5	27.197%
6	27.197%
7	18.139%
8	48.871%
9	14.963%
10	18.139%
11	14.963%
12	11.614%
13	48.871%
14	36.182%
15	10.393%
16	27.394%
17	23.053%
18	84.287%

**Model Accuracy:**  
72%



# What's left to do?

- Reach 80% ML model accuracy.
- Fine tune logistic regression
  - Feature selection
  - Coefficients
- Test other models
  - XGBoost
  - Three-layer neural net
- Convert CSS to Angular
- Explain score with contributing metrics if prediction is above threshold
- Write ML results into database



# Questions?

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