



# Alpha Presentation

## Provider Anomaly Analytics Toolkit

### The Capstone Experience

Team Roosevelt Innovations Data Science

Justin Doan

Carson Honkala

Jeffrey Lo

Tanawan Premisri

Junchi Zhu

Kate Roney

Department of Computer Science and Engineering

Michigan State University

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

# Project Overview

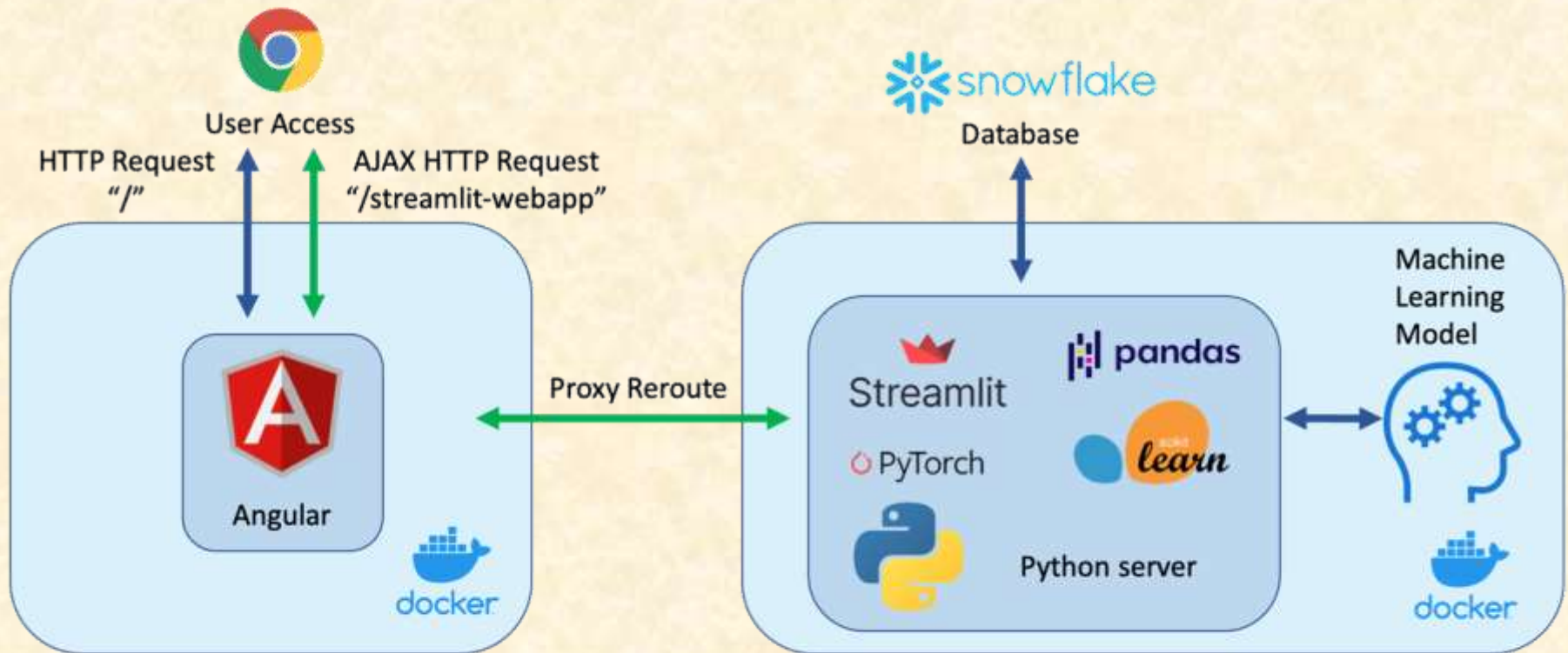
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- Web app to eliminate fraud, waste, abuse
- Identify potentially problematic dental providers
- Create visualizations of key metrics for dental provider analysis



# System Architecture

Roosevelt  
simple. seamless. smart.




# Outlier Identification


main · Streamlit

← → ↻ 🔒 Not Secure 0.0.0.0:8080


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Outlier Identification



Provider Comparison



Provider Summary

## Outlier Identification

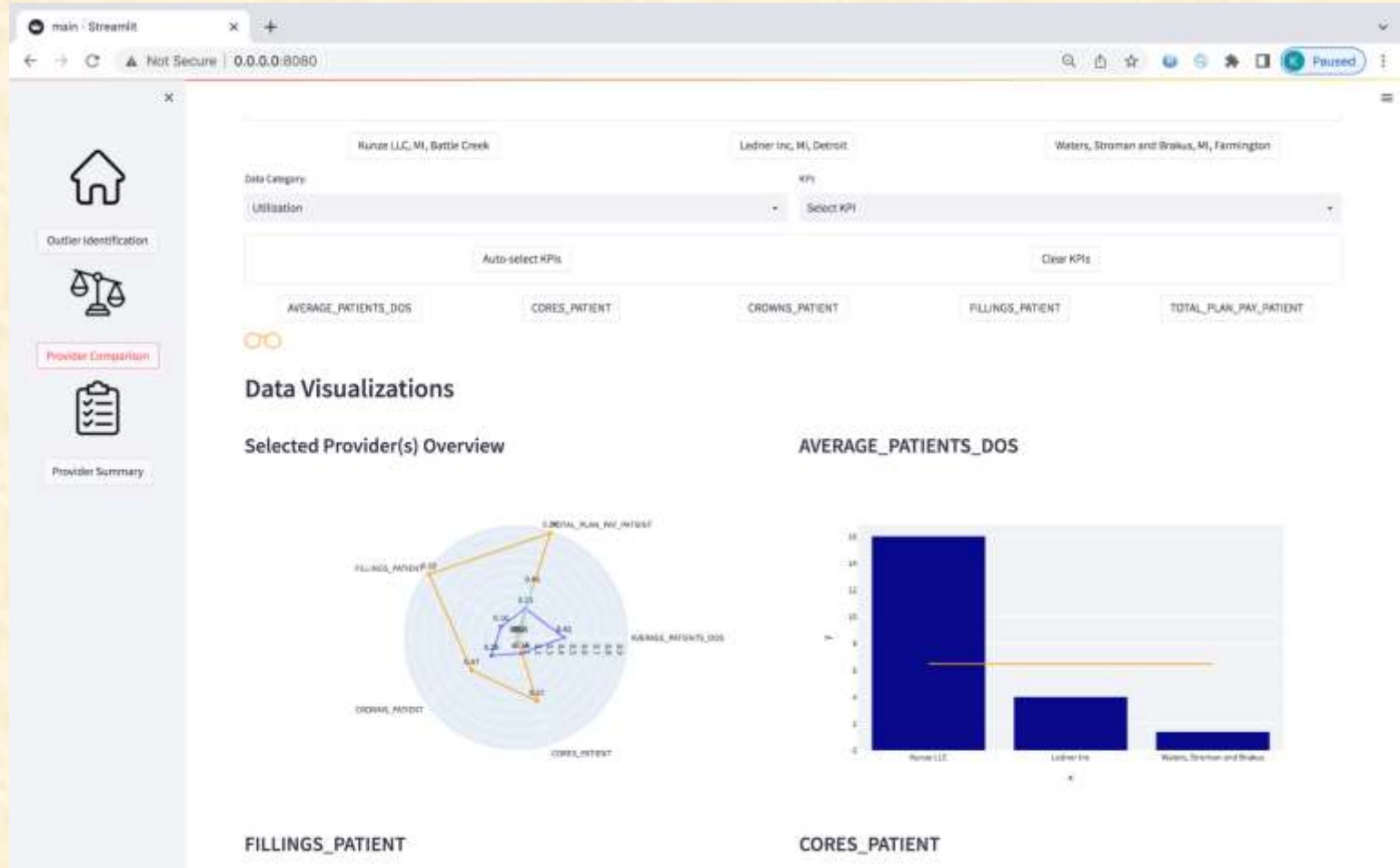
Region: MI City: Lansing Risk Score: 98

Submit

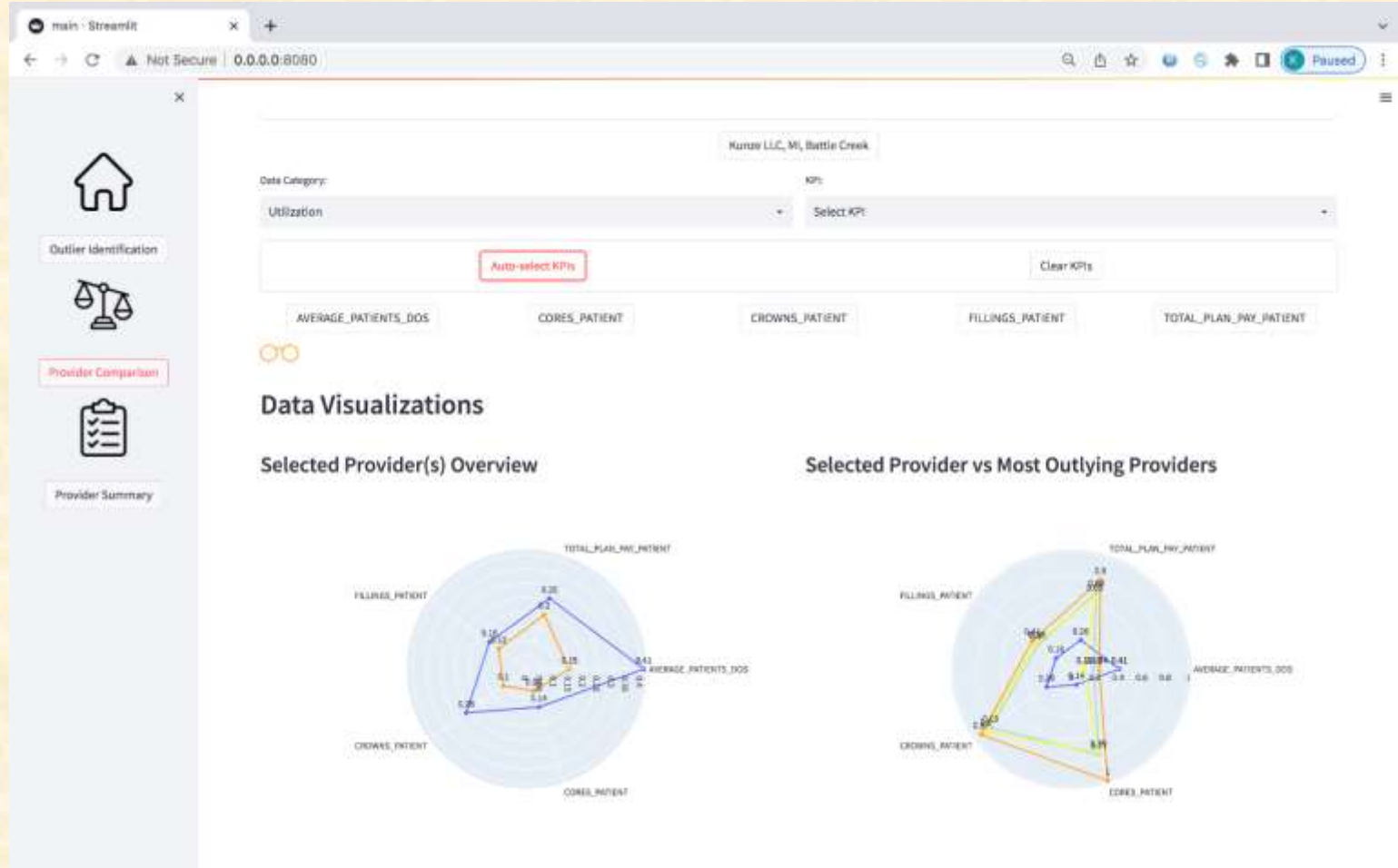
State	City	Provider	Risk Score	Total plan pay	Total number of days	Costs / patient
MI	Lansing	Raynor, Schamberger a...	100	257290.17	97	0
MI	Lansing	Ballstner Inc	100	91981.37	138	0.067055394
MI	Lansing	Sipes, Polich and Lang...	100	48897.27	94	0.181206054
MI	Lansing	Heathcote-Kirlin	100	344822.7	182	0.013215859
MI	Lansing	Bayer, Jaskolski and La...	100	932997.97	189	0
MI	Lansing	Muller Inc	100	332314.7	247	0.099903939
MI	Lansing	Streich and Sons	100	295843.7	194	0.037138279
MI	Lansing	Prohaska-Price	100	168799.25	191	0.079617634
MI	Lansing	Christiansen-Schmeler	100	297832.15	201	0.153716216
MI	Lansing	Blick-Mosinski	99	203663.71	205	0.149139579
MI	Lansing	Quigley LLC	99	302131.39	201	0.06302521
MI	Lansing	Streich-Reichert	99	265854.15	186	0.026578073
MI	Lansing	Gerlach-Dane	99	79257.54	94	0.051194539
MI	Lansing	Kozzy-Deckow	99	274465.01	193	0.067055866
MI	Lansing	Schamberger, Cummin...	98	364581.59	202	0.069811321
MI	Lansing	Howell, Kovack and P...	98	302271.72	202	0.124804992
MI	Lansing	Wiza, Brakus and Smith	98	13645.46	34	0.040540541
MI	Lansing	Jacobs-Bode	98	327444.61	225	0
MI	Lansing	Bailey Group	98	121746.05	165	0.080896876
MI	Lansing	Gusikowski and Sons	98	208216.9	219	0.17
MI	Lansing	Spinka and Sons	98	27696.7	27	0.05



# Provider Comparison View



# Comparison – One Provider Selected





# Provider Summary View

The screenshot shows a web application interface for a 'Provider Summary'. The browser window title is 'main · Streamlit'. The address bar shows '0.0.0.0:8080'. The application has a sidebar with three icons: a house for 'Outlier Identification', scales for 'Provider Comparison', and a clipboard for 'Provider Summary' (which is highlighted in red). The main content area is titled 'Provider Summary'. It features three filters: 'State' set to 'MI', 'City' set to 'Select City', and 'Provider' set to 'Jaskolski, Gaylord and O'Hara'. Below these filters is a table with columns 'STATE', 'CITY', and 'P\_B\_NAME'. The table contains one row with values 'MI', 'Lansing', and 'Jaskolski, Gaylord and O'Hara'. Below the table is a section titled 'Key performance metrics'. It has two filters: 'Select KPI category' set to 'Informational' and 'Number of KPIs' set to '3'. Below these filters are three boxes, each containing a KPI value and its percentile ranking out of 1638. The first box is for 'SERVICE\_DATES' with a value of 206 (1299th out of 1638). The second box is for 'TOTAL\_TREATMENT\_COUNT' with a value of 2021 (527th out of 1638). The third box is for 'TOTAL\_PATIENT\_COUNT' with a value of 2283 (89th out of 1638).

**Provider Summary**

State: MI City: Select City Provider: Jaskolski, Gaylord and O'Hara

STATE	CITY	P_B_NAME
MI	Lansing	Jaskolski, Gaylord and O'Hara

**Key performance metrics**

Select KPI category: Informational Number of KPIs: 3

SERVICE_DATES	TOTAL_TREATMENT_COUNT	TOTAL_PATIENT_COUNT
206	2021	2283
1299th out of 1638	527th out of 1638	89th out of 1638



# What's left to do?

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- Improve machine learning accuracy
- Implement shopping cart view
- Improve readability of visualizations
- Finish integration into Angular





# Questions?

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