



# VA Enrollment: Most Veterans Don't

BY JOSHUA KUEHL

# Agenda

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Background

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Data Science Question

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Dataset

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Method

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Results

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Issues

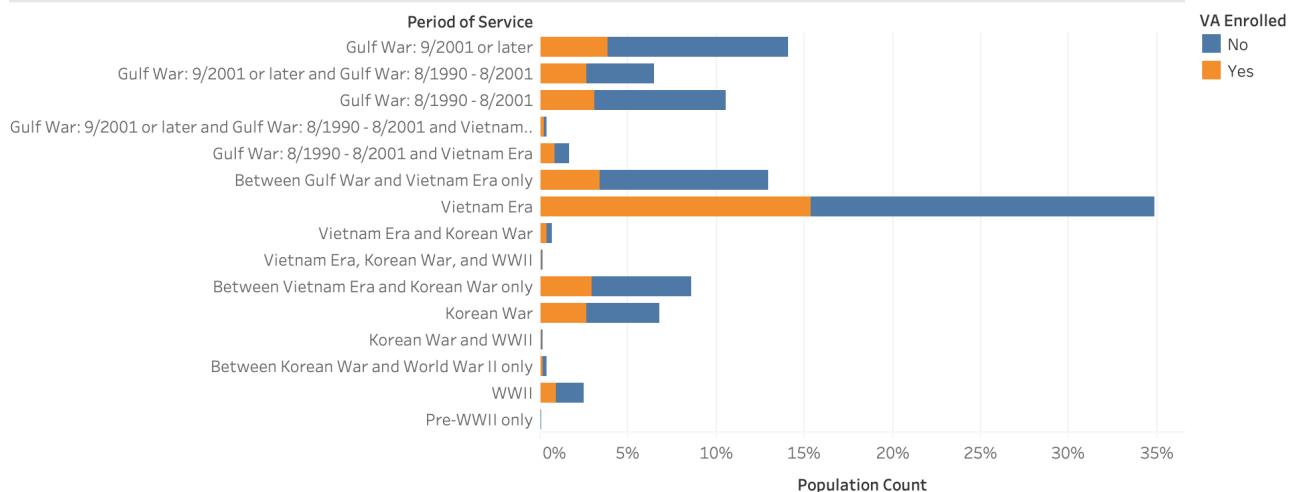
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Conclusion

# Background

- ▶ Any individual with an Honorable Discharge is eligible to enroll in the Veterans' Administration
- ▶ Eligible Veterans comprise 7% of US population
- ▶ Only 42% of eligible Veterans enroll as of 2014
- ▶ The VA is more than just healthcare

Enrollment by Era of Service



% of Total Count of us\_pop\_1yr\_tableau\_map.csv for each Period of Service. Color shows details about VA Enrolled. The view is filtered on Period of Service, which has multiple members selected.

# Data Science Question

- 1. WHO ARE THE VETERANS THAT DO NOT ENROLL IN THE VA?**
- 2. DO VETERANS THAT CHOOSE NOT TO ENROLL HAVE IDENTIFIABLE CHARACTERISTICS?**

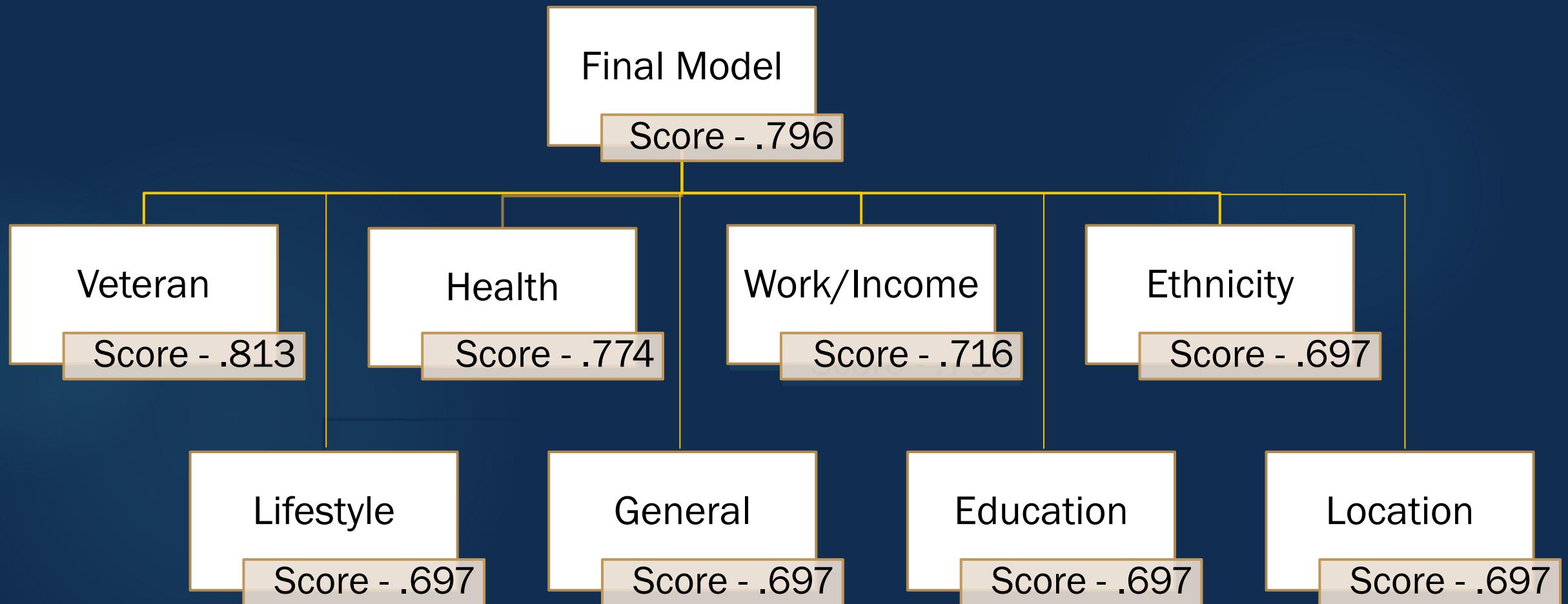
# PUMs Datasets

- ▶ **Roughly 1% of Population**
- ▶ **1yr (2018) and 5yr (2014-2018) sets**
- ▶ **Joinable data for housing and population statistics**
- ▶ **246 features in the population set**
- ▶ **5yr data has 14.9 Million records**

# Methodology

- ▶ Classification Problem
  - ▶ Feature HINS6 records VA enrollment
- ▶ Logistic Regression
- ▶ Grouped similar independent features
  - ▶ Lifestyle
  - ▶ Ethnicity
  - ▶ Education
- ▶ Statistically significant

# Results



# Results

## What DOES NOT Matter

Era of service



Location



Lifestyle  
Marriage Status



## What DOES Matter

Veteran Characteristics



Work and Income

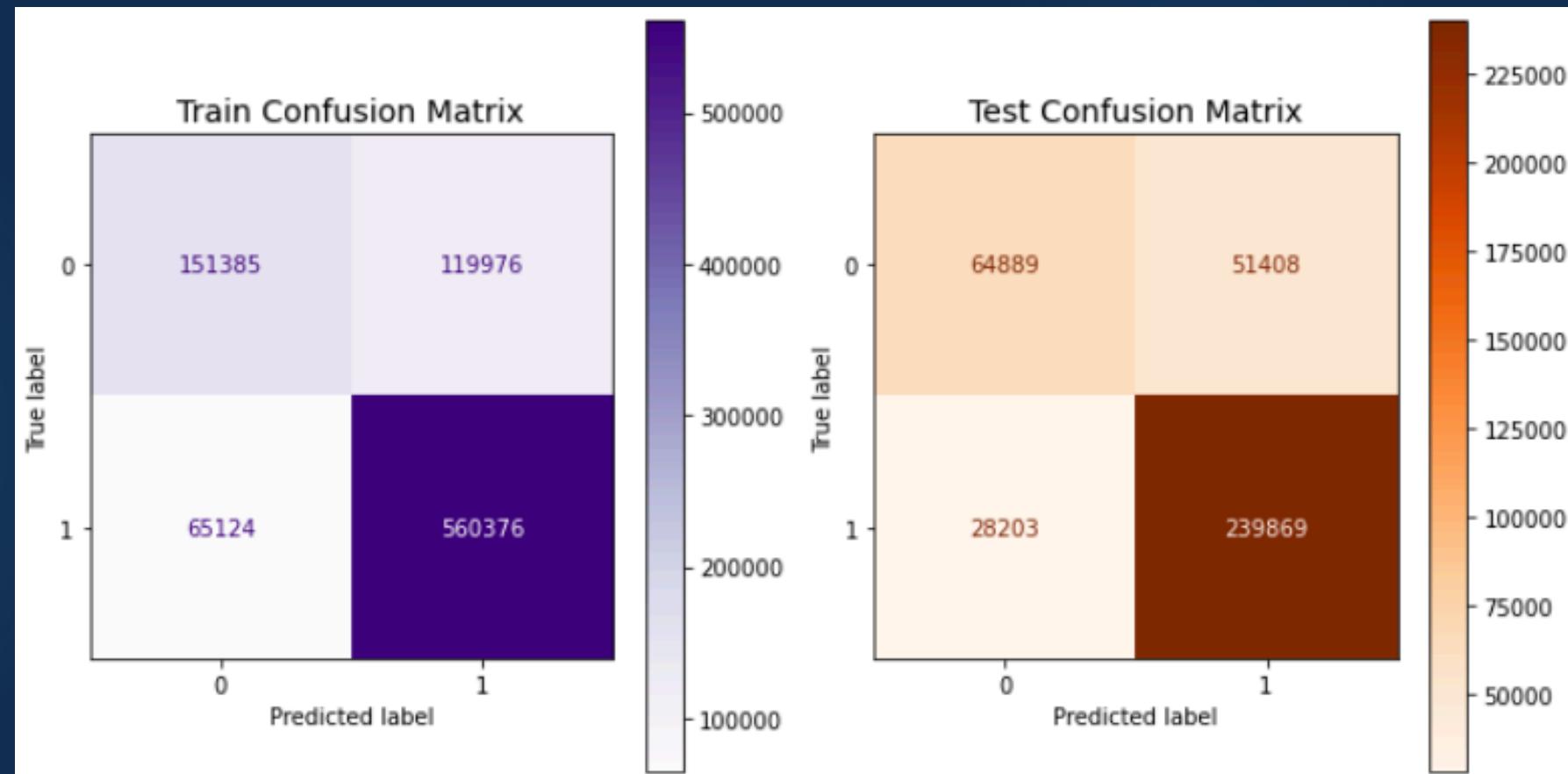


Education



# Final Model

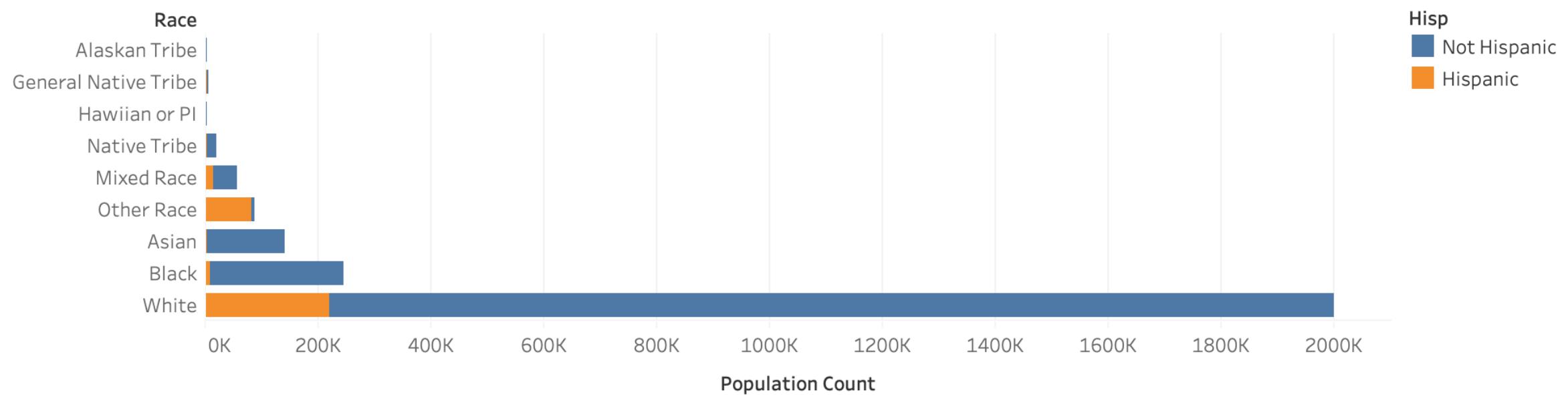
- ▶ 42 Features
- ▶ Train Score: .7936
- ▶ Test Score: .7929
- ▶ Cross Val Score: .7936
- ▶ Best Features
  - ▶ CONSTANT: 77%
  - ▶ Disability Rating: 64%
  - ▶ TRICARE: 32%
  - ▶ Served in Vietnam: 9%
  - ▶ STEM Degree: 96%
  - ▶ Bachelor's Degree: 6%
  - ▶ Master's Degree: 12%



# ISSUES

- ▶ Some data requires more investigation
- ▶ Additional features (Officer/Enlisted, Discharge Status, Branch of Service)
- ▶ Feature Descriptions (PWGTP)

Population Count by Race





Questions?