Medical School Inequity Analysis

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Purpose

- What racial disparities are present in medical school applicants and how does it affect the admissions process?
- Is there enough data to show the breakdown of each?

Datasets Used

- Applicants to U.S. Medical Schools by Race/Ethnicity and State of Legal Residence
- Matriculants to U.S. Medical Schools by Race/Ethnicity and State of Legal Residence
- MCAT Scores and GPAs for Applicants and Matriculants to U.S. MD-Granting Medical Schools
- MCAT Scores and GPAs for Applicants and Matriculants to U.S. MD Granting Medical Schools by Race/Ethnicity
- MCAT Scores and GPAs for Applicants to U.S. MD-Granting Medical Schools by State of Legal Residence
- MCAT Scores and GPAs for Matriculants to U.S. MD-Granting Medical Schools by State of Legal Residence

Methods

- Combined Applicant and Matriculant Datasets using Python
- Logistic regression models on all dataset types:
  - Applicants vs. Matriculants by state and race.
  - GPA and MCAT metrics for applicants and matriculants by state.
  - GPA and MCAT metics for applicants and matriculants by race.
- Visualized results with JavaScript charts

Results

Feature	Coefficient
American Indian or Alaska Native	0.9172
Asian	-0.0974
Black or African American	0.7214
Hispanic, Latino, or of Spanish Origin	-0.2087
Native Hawaiian or Other Pacific Islander	-0.3516
White	-0.0038
Other	-0.0424
Multiple Race/Ethnicity	-0.3780
Unknown Race/Ethnicity	0.0560
Non-U.S. Citizen and Non-Permanent Resident	-0.5193
Total	-0.0789

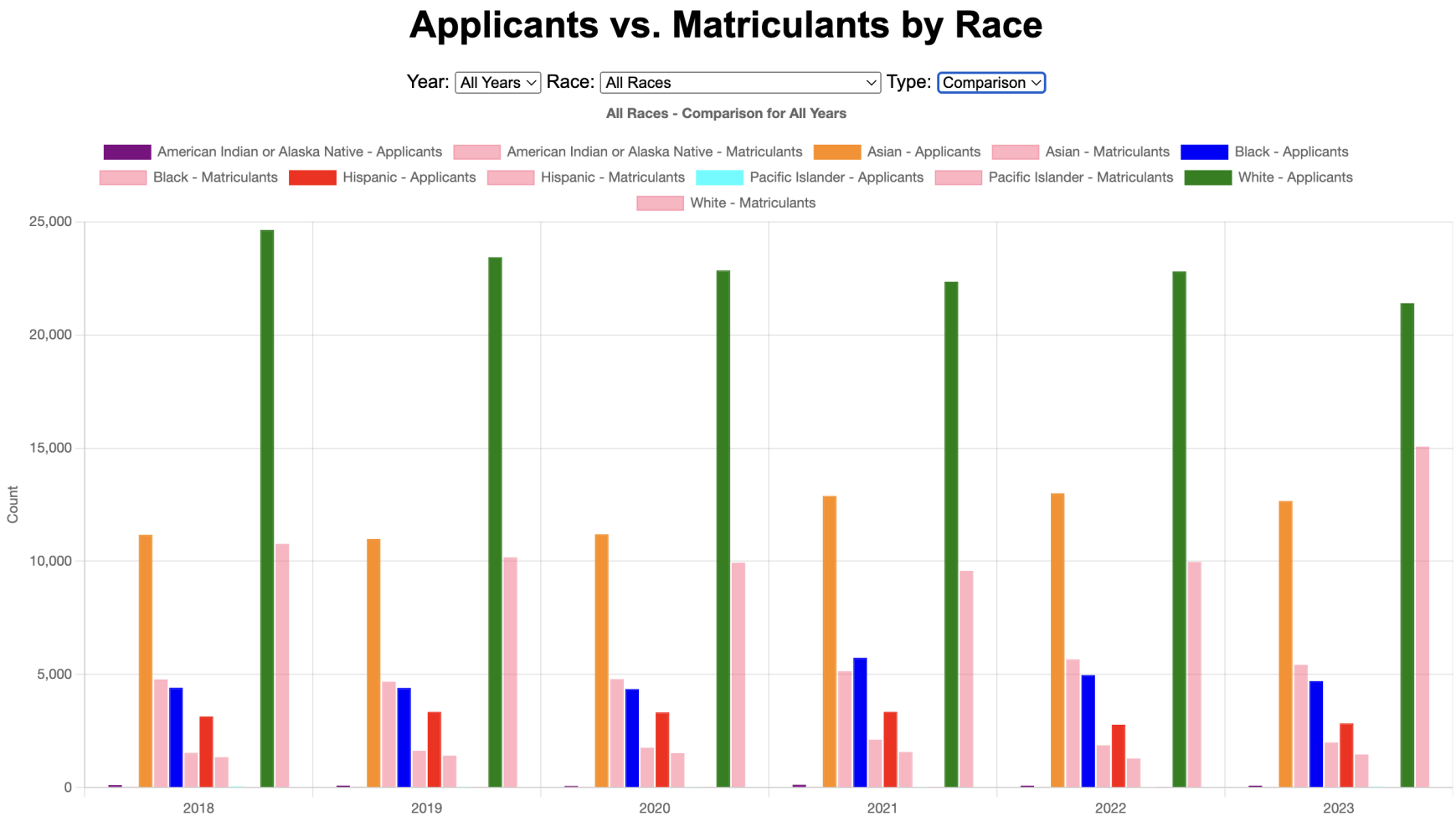
Model Performance

- The model shows **poor performance** in predicting matriculants.
- Datasets are not correlated enough to provide accurate predictions regarding the information.
- High coefficients for racial groups indicate their influence on admissions.

Key Findings

- Logistic Regression on **GPA and MCAT** scores yields **high accuracy** (93%), suggesting these are strong predictors of matriculation.
- Logistic Regression on **State and Race** data shows **moderate accuracy** (75%), indicating these factors have some predictive power.
- Including **Race** with **MCAT and GPA** data results in **lower accuracy** (66.67%), possibly due to data complexity.

Trends by Year and Race



Conclusion

- **MCAT scores and GPA** are strong predictors of medical school matriculation.
- Racial representation was low for Non-White and Asian groups.
- **State** has a moderate impact on admissions.
- Including **race** with academic metrics decreased model accuracy.
- **Further research** is needed to understand and address inequities in the medical school admissions process.