The Analysis: The Production of a Death Penalty Execution Method Prediction Model with MATLAB and its Sociotechnical Applications

ISABELL KOSSAR

DATA TABLE PRESENTS DEATH PENALTY ADMINISTRATIONS SINCE GREGG V. GEORGIA DECISION IN 1976

RELEVANT DATA
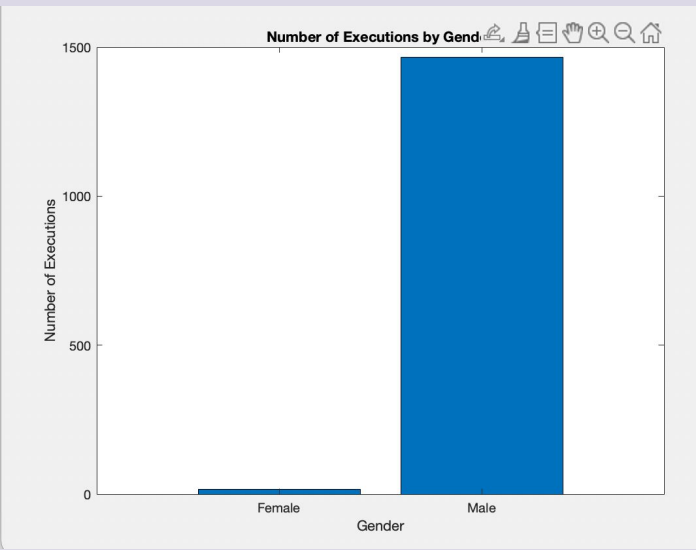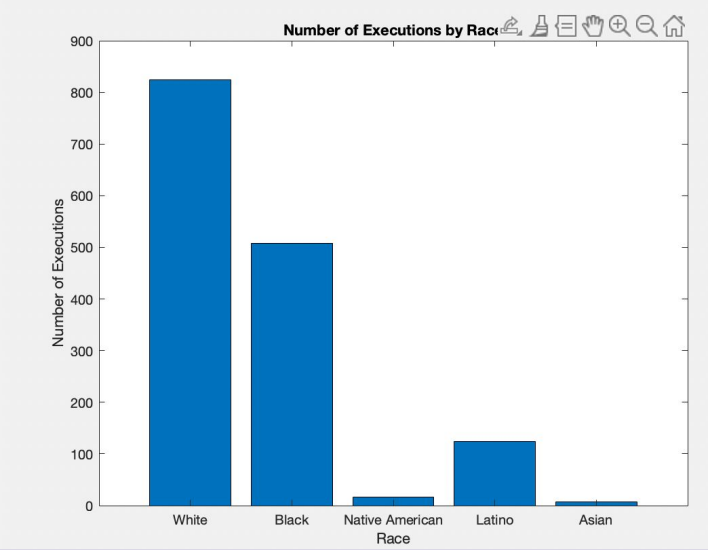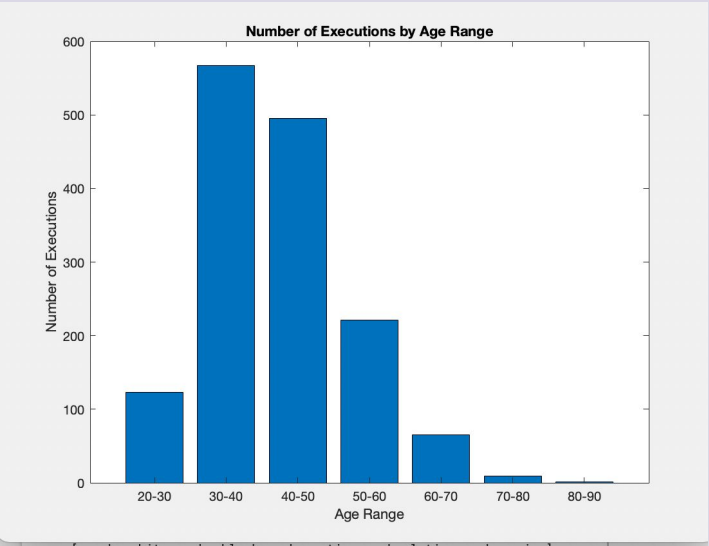- AGE
- RACE
- GENDER
- EXECUTION METHOD
- STATE AND COUNTY
- DATE

THE PROBLEM:

- THE DEATH PENALTY IS HISTORICALLY ADMINISTERED IN HIGHER PERCENTAGES TO PEOPLE OF COLOR, AND LOW SOCIOECONOMIC STATUS
- A MORAL DEBATE EXISTS AS TO WHETHER IT IS JUST TO ADMINISTER THE DEATH PENALTY
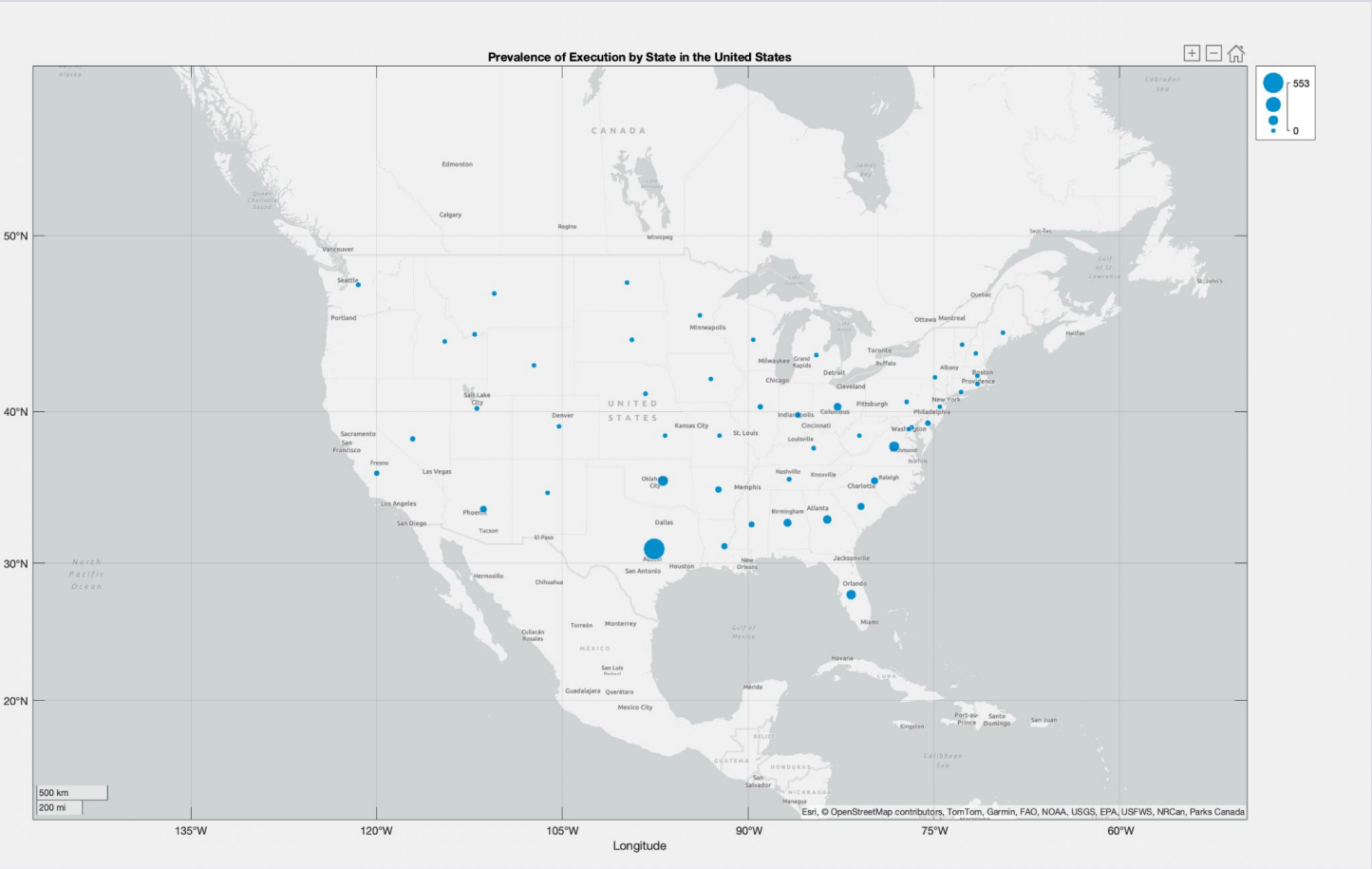- DEATH PENALTY HAS BECOME POLITICIZED AND STRATIFIED BY STATE

QUESTIONS POSED:

- BASED ON AGE, RACE, AND GENDER WHAT IS THE PROBABILITY OF THE DEFENDANT GETTING EXECUTED WITH EACH OF FIVE EXECUTION METHOD
- DOES THE PREVALENCE OF EXECUTION FOR MURDER TRIALS VARIES BY STATE?
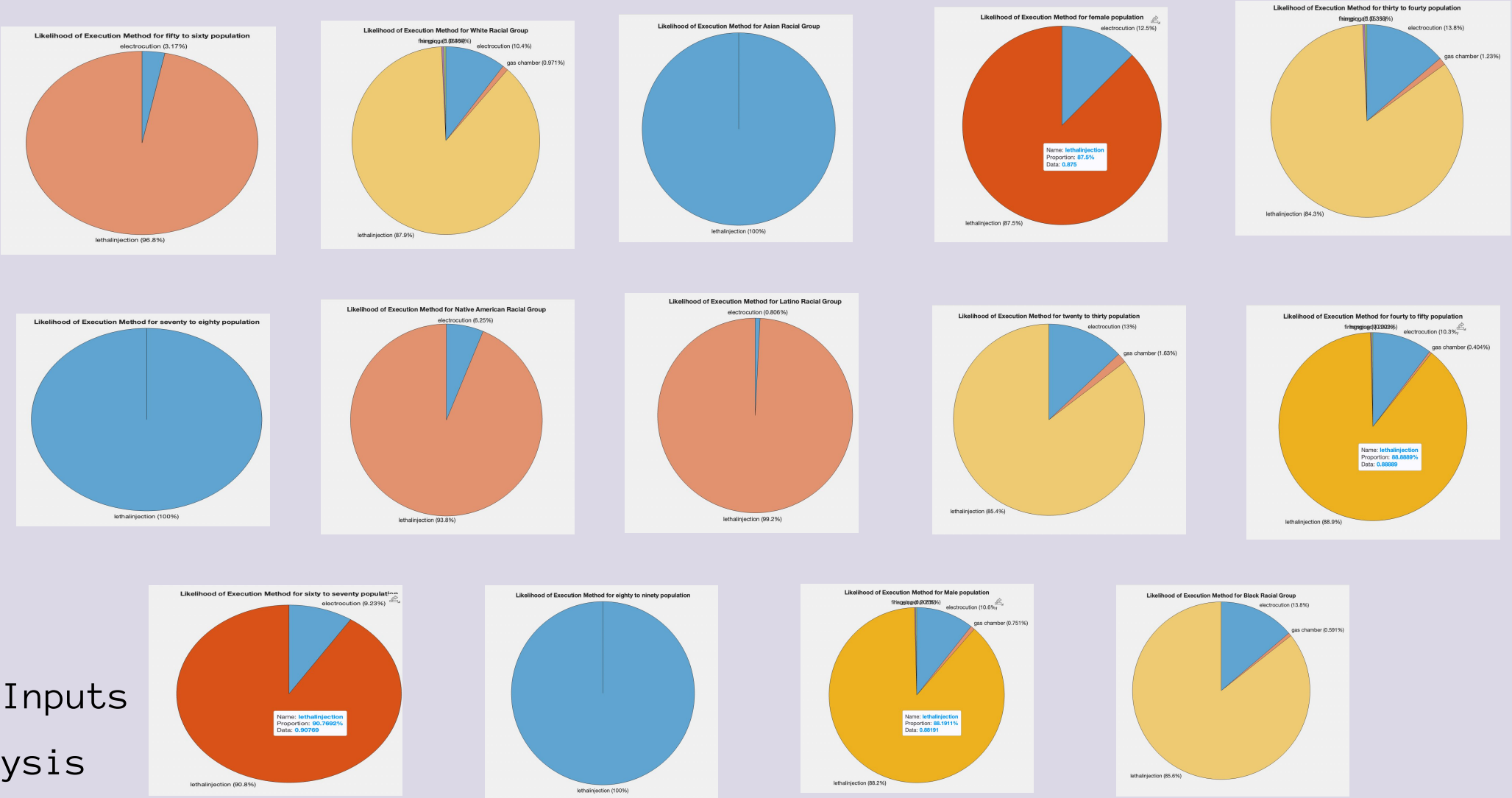
SIGNIFICANT VISUALIZATIONS AND ANALYSIS

Bar Graph Series Showing Racial, Gender, and Age Representations

Map of United States Geometrically Demonstrating Prevalence of the Death Penalty by State

Pie Chart Series Illustrating Correlates Between Identity Groups and Execution Method

Final Statistics – Machine Learning Outputs Based on User Inputs from "groupcounts" Tabulations and Calculations and Analysis

CONCLUSIONS AND INSIGHTS

01.

RACIAL, GENDER, AGE, & STATE FINDINGS

- Men, in comparison to women, are executed by the death penalty in much larger quantities and more often executed by hanging, firing squad, or gas chamber methods
- Native Americans and Asians are disproportionately executed by lethal injection in comparison to other races.
- White and Black populations are executed by the death penalty at a significantly higher volume than Latino, Native American, and Asian populations
- A linear positive trend exists between age and likelihood of lethal injection
- The southeast region of the United States has the most executions
- Texas specifically outnumbers all the other states significantly with a total of five hundred and fifty-three executions (almost ⅓ of all executions recorded)

03.

ALGORITHM AND SOCIETAL BIASES

- Algorithm assumes same probabilities for each execution method for defendants of different crime severities – overestimations and underestimations of probabilities of execution methods based on input values because of omission of context-dependent third variable
- Algorithm has majority of data for white male populations reflecting systemic power dynamics of these groups
- Societal biases of xenophobia leading to unequal treatment under the law reflected in administration of death penalty

04.

FURTHER QUESTIONS AND CONCLUSIONS

- Critically exploring racial bias
  - How does states' execution method correlate with racial group?
  - What is the likelihood of death penalty administration based on state and racial group?
- Research and policy in death penalty dialogue should be focused on targeted restriction
- Technology should be used to find and spreading causes of abuse of the death penalty to the American public to promote action