Assessing Civilian Complaints Against BPD Officers

Abdelazim Lokma (CDS MS '25), Yewon Lee (CDS '25), Matthew Cheng (CDS '25), Rohan Anand (CDS '25)

CDS DS549: Spark! Machine Learning X-Lab Practicum

BOSTON UNIVERSITY

SPARK!

NATIONAL LAWYERS GUILD MASS CHAPTER

Clients and Mentors

Clients: National Lawyers Guild Mass Chapter
PM: Tanisq Mallpani
Partners: BU Spark!

Tech Stack

FairCase A.I	Data Analysis
FastAPI	Pandas
smtplib	Seaborn
Langchain	Matplotlib
ChromaDB	

Project Summary

The data for this project consists of internal affairs complaints filed against Boston Police Department (BPD) officers. These complaints document various forms of officer misconduct, ranging from excessive use of force and racial bias to administrative violations.

The **National Lawyers Guild Massachusetts Chapter (NLG-Mass)** intends to use the data to advance their mission of holding the Boston Police Department (BPD) accountable for officer misconduct and advocating for systemic reforms. Specifically, they aim to achieve the following:
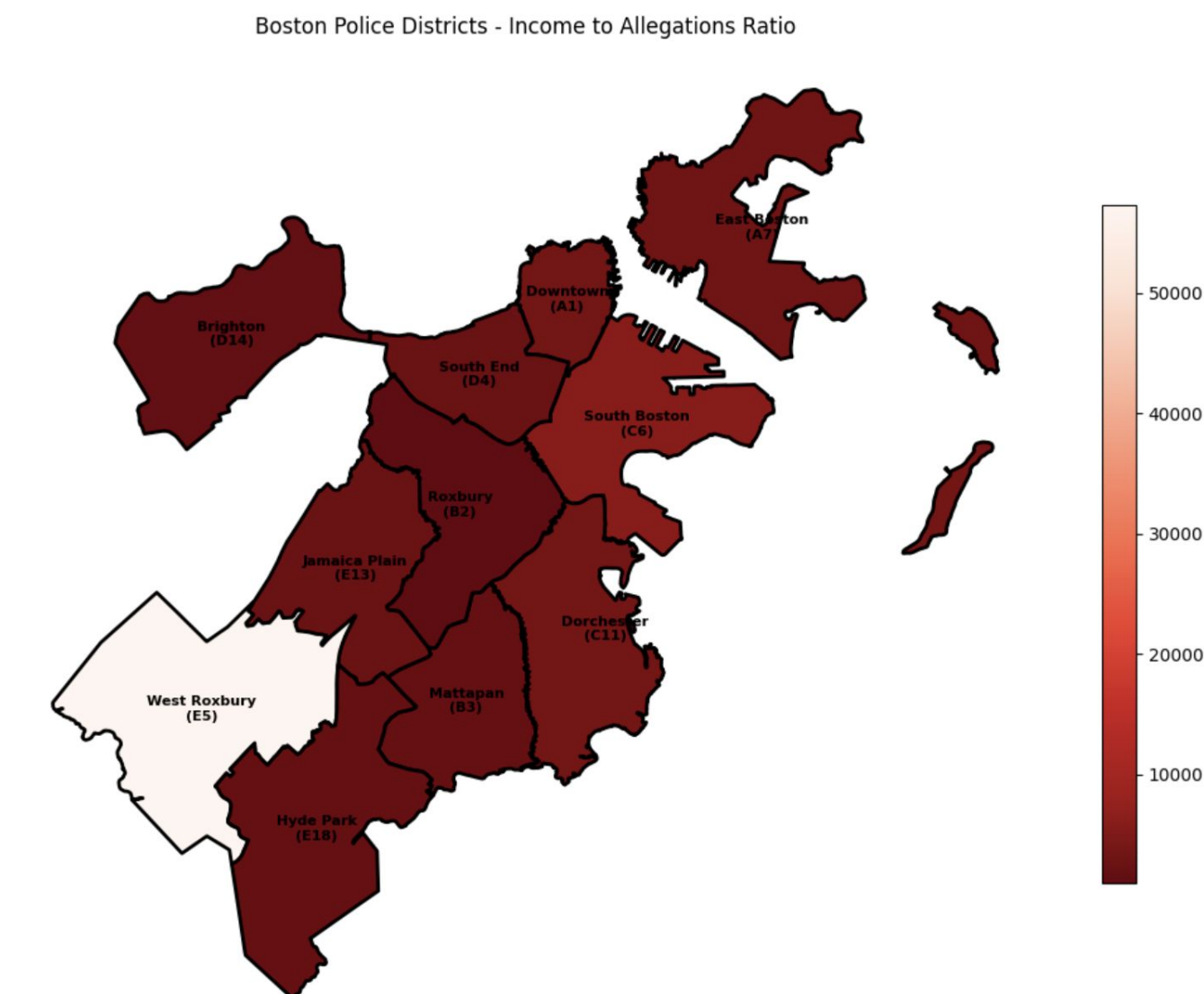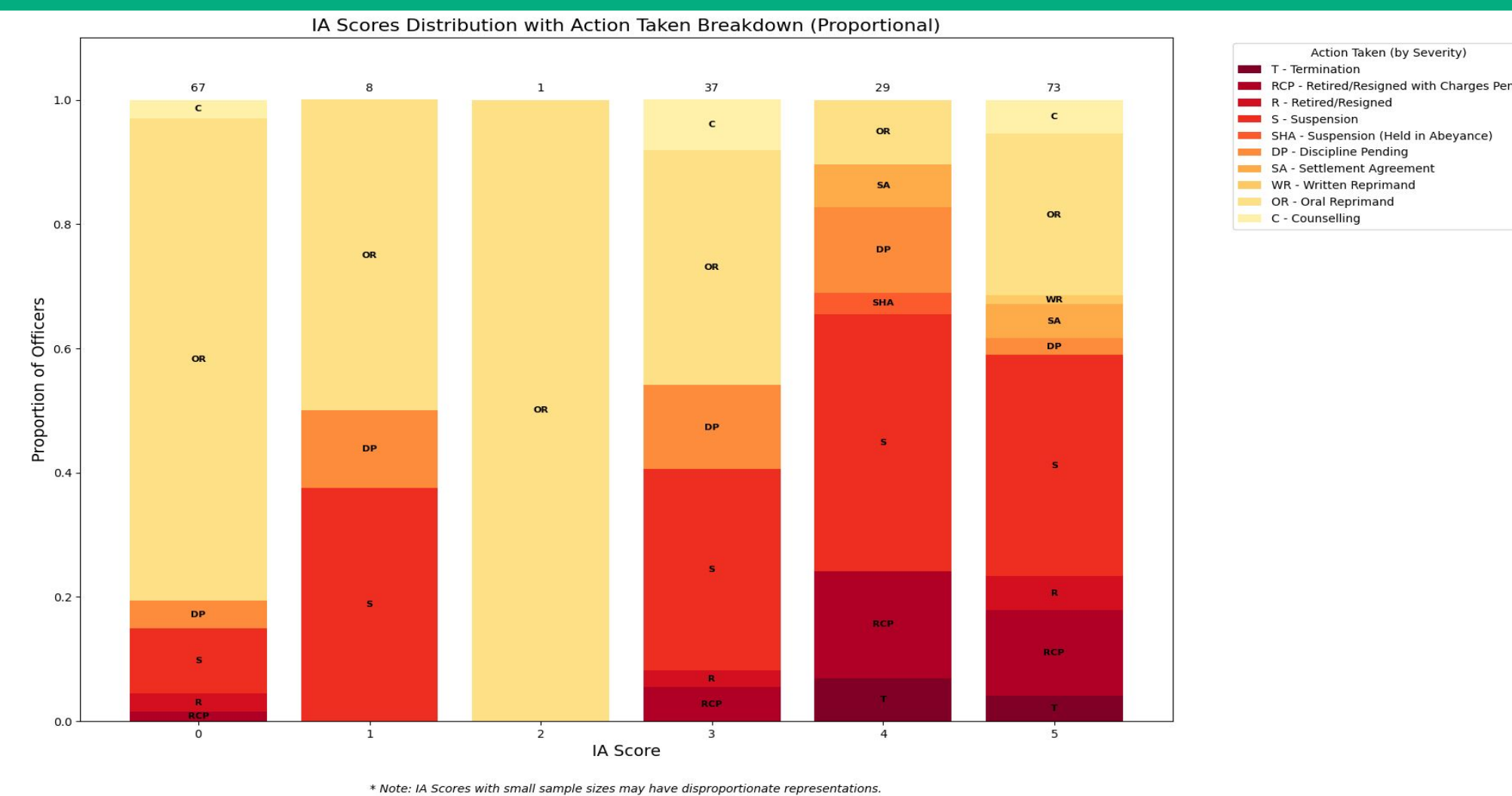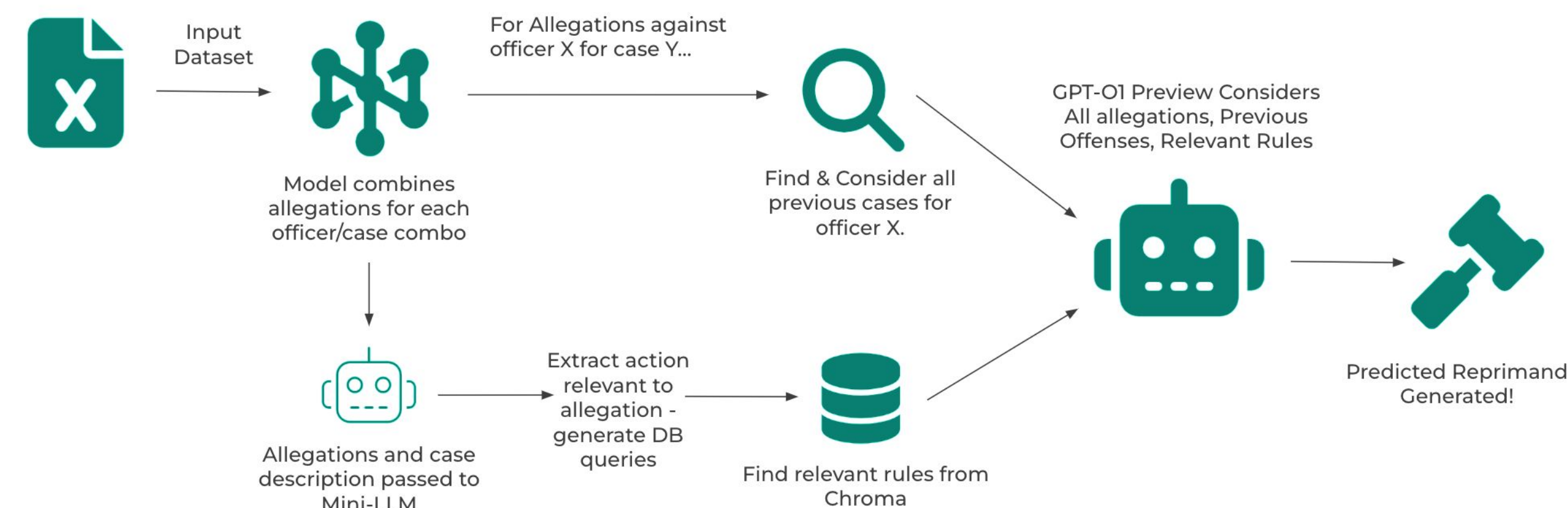
1. Automate the Data Processing to Focus on Analysis
2. Uncover Systemic Issues in Police Accountability
3. Highlight Patterns of Misconduct
4. Explore Socioeconomic and Geographic Trends

Project Results

Key Questions:

1. Can we evaluate how BPD Internal Affairs holds officers accountable for misconduct?
   a. Is there a relationship between officer misconduct and the level of accountability imposed?
   b. What were the consequences for the most serious cases of misconduct?
   c. How does officer misconduct differ across various areas of Boston?

2. Can we create a tool to assist clients in analyzing and reviewing cases without replacing human judgment?
   a. Review each case description and allegations.
   b. Find relevant BPD rules and cross reference them with the case.
   c. Consider the accused officer's previous offenses.
   d. Determine the officer's culpability and explain its own reasoning.

FairCase AI – Designed to Speed Up Case Reviews:

IA Scores Distribution with Action Taken Breakdown (Proportional)

* Note: IA Scores with small sample sizes may have disproportionate representations.

Boston Police Districts - Income to Allegations Ratio

Input Dataset → Model combines allegations for each officer/case combo → For Allegations against officer X for case Y... Find & Consider all previous cases for officer X. → GPT-O1 Preview Considers All allegations, Previous Offenses, Relevant Rules → Predicted Reprimand Generated!

Allegations and case description passed to Mini-LLM → Extract action relevant to allegation - generate DB queries → Find relevant rules from Chroma

Conclusion

We were able to perform exploratory data analysis on the key questions that were provided from our client.

In addition, we were able to build a model that reviews complaint and allegations, cross reference with relevant policies (RAG retrieved), assess previous offenses, evaluate severity of officer actions, and determine disposition and recommend reprimand. Our client can use this model simply by submitting a .csv file with the specified format.

For further research, we recommend reaching out to the Civilian Review Board (CRB), an independent board of Boston residents that can review and investigate certain complaints against the Boston Police Department. The CRB can provide the results of their own investigations which can include body cam footage, surveillance footage, or additional documents. Having these extra data might help increasing the accuracy or the performance of the model.

Reflections

From an ethical standpoint, this model should **not** be used to determine police officer punishments in real scenarios. The underlying data is flawed, and the model lacks contextual understanding. However, it can aid in automating the case review process by providing an additional perspective, as long as clients review cases independently first and critically assess the model's outputs for logical inconsistencies.