Can You Predict Where Parking Tickets Will Strike Next?

Your Mission: Help Charlottesville Students Avoid Parking Tickets

Picture this: You're a second-year UVA student rushing to your 9 AM discussion section. You circle the Corner three times looking for parking. Finally, you spot a space on a side street you've never used before. Do you risk it?

What if you could predict which streets are parking enforcement hotspots—and when?

The Challenge

Charlottesville issues thousands of parking tickets every year, costing students and residents real money. The data is public, but hidden in these parking violations are patterns waiting to be discovered. Your challenge is to build a predictive model that answers the question: **Given a specific street and time, how many parking tickets are likely to be issued?**

What You'll Do

You'll work with real parking ticket data from Charlottesville's Open Data portal, engineer meaningful features from temporal and location data, and evaluate multiple modeling approaches including time series analysis and machine learning algorithms.

Your Deliverable

- An exploratory data analysis revealing parking violation patterns
- Feature engineering that transforms raw data into predictive signals
- Multiple trained models with performance comparisons
- Actionable insights about where and when parking tickets are most common
- Visualizations that communicate your findings clearly

Ready to Get Started?

All the resources you need are in the GitHub repository linked below, including the dataset, starter code, and references to key techniques. The detailed rubric will guide you through each stage of the project.

GitHub Repository: https://github.com/SanjayKarun4444/DS4002-CS3

Skills You'll Practice: Python programming, pandas data manipulation, time series analysis, machine learning, data visualization, communicating results.