

# Detection & Prediction of Geographical Changes in Crime Rates

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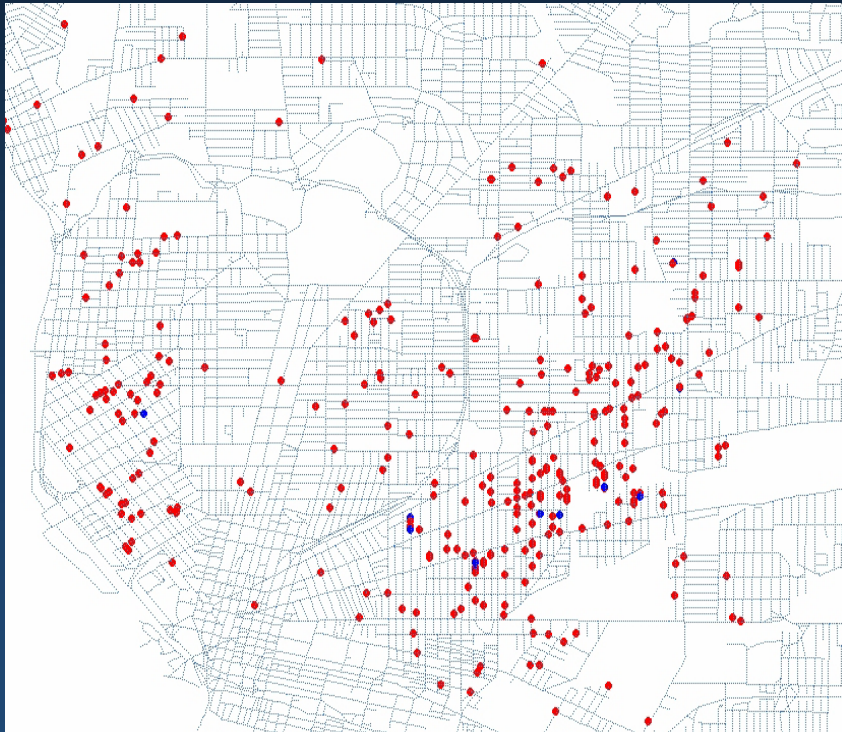
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# Detection & Prediction of Geographical Changes in Crime Rates

- The three goals of this project are: to develop statistical methods and monitoring models for the quick detection of emerging and declining geographic clusters of criminal activity; To develop prediction models that forecast how the pattern of crime will change in response to deployments of resources; and to develop the methods so that they readily interface with GIS for display and analysis.

# Quick Detection of Geographic Clusters of Crime

## 1996 Arsons



Blue Dots Represent Successive Arsons Leading to New Geographic Cluster Signal

- Methods of spatial analysis that are used in finding clusters of crime are often *retrospective*.
- *Alternative:* Repeated testing of patterns of crime as new data become available.
- Objective is to uncover new geographic patterns quickly.

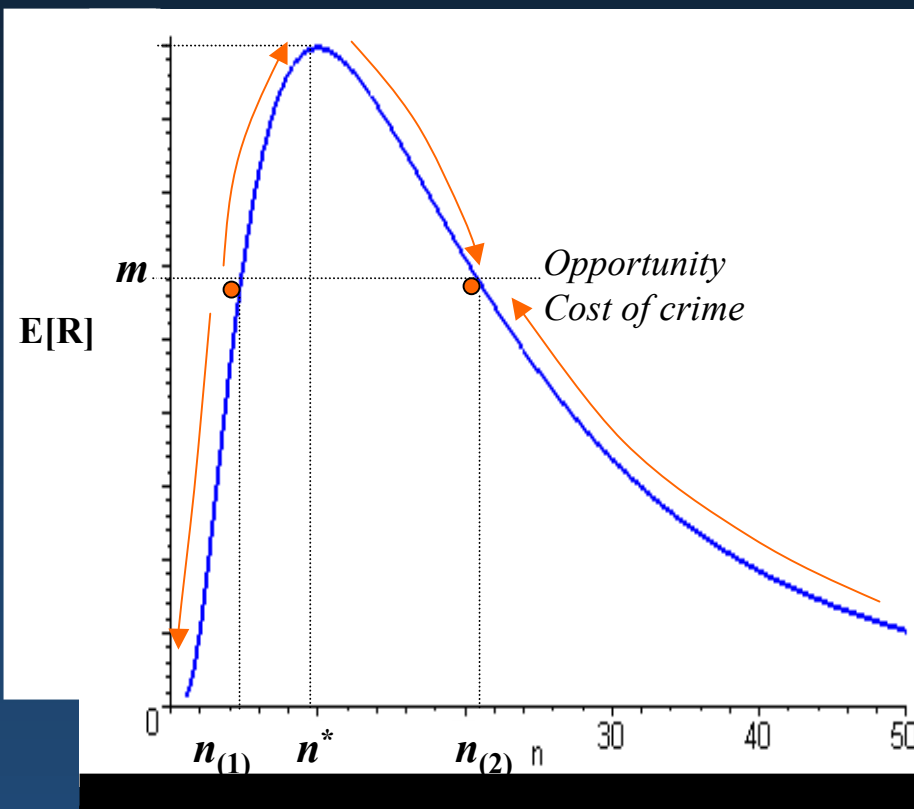


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# A Socio-Economic Model of the Geographical Displacement of Crime



Crime Level

- Model to predict the number of crime incidents within a police jurisdiction.
- Expected reward is a function of wealth, crime level & police enforcement.
- Goal is to determine the best allocation of police enforcement resources.



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