Machine Learning: How ML Can Detect Crime in Charlottesville

(Technical Report)

Organized Labor's Fight Against Automation in the U.S.

(STS Research Paper)

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by

Connor Goodall

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Preface

Companies automate to lower labor costs and increase productivity. Many workers fear that automation threatens their jobs.

Crime prevention requires effective crime forecasting. The project team developed a machine learning algorithm to help law enforcement agencies in Charlottesville, Virginia, forecast violent and nonviolent crime rates. The Charlottesville open data catalog supplied data for a training set and a test set. We used eight regression models for the training set, tuned their hyperparameters, and chose the one with the lowest error rate as the model for the algorithm. The new algorithm gave 0.016% and 0.85% as the distances between predicted and actual violent and nonviolent crime rates. The algorithm may be useful in a visualization tool predicting local crime risks.

Many workers fear automation threatens their jobs. In the United States, unions help their members resist or manage the employment threats of automation by publicizing the problem, through influencing the government, through picketing and boycotting, and by helping their members adapt through training or reskilling programs or by researching ways how to adapt.