

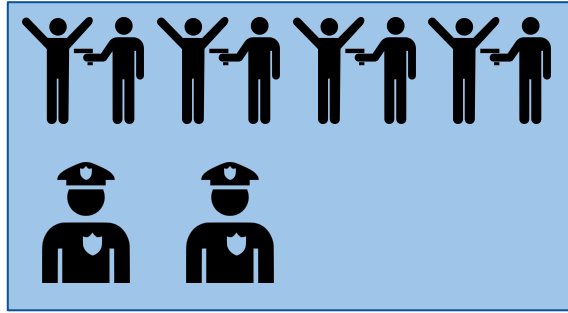
# Forecasting Seattle Crime

Laura Borton



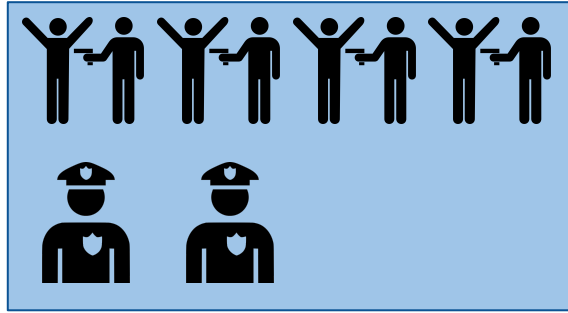
# Help Law Enforcement Allocate Resources

Historical

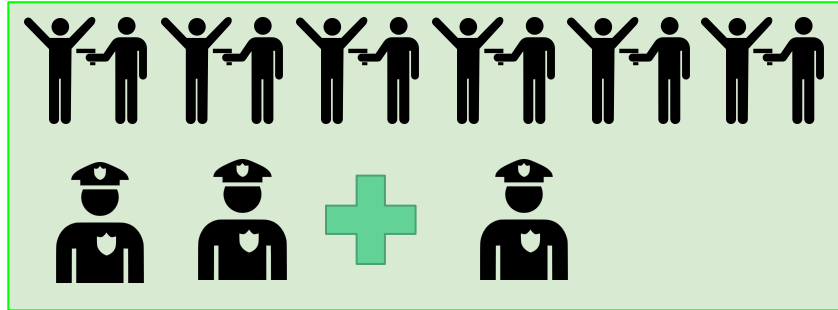


# Help Law Enforcement Allocate Resources

Historical



Next Week



# Workflow and Tools



# Workflow and Tools



## Data Processing



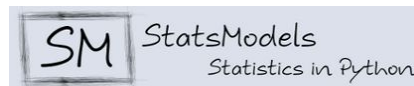
# Workflow and Tools



Data Processing



Modeling



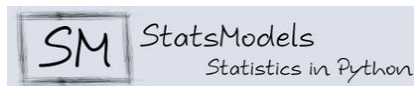
# Workflow and Tools



Data Processing



Modeling



Visualization



# Data

Date Range:  
Jan 6, 2008 - August 26, 2018

Crimes : 488,000+



**Seattle**

Open Data Program

	Crime Subcategory	date
2438	ROBBERY-COMMERCIAL	2008-01-13
2439	ROBBERY-STREET	2008-01-13
2440	AGGRAVATED ASSAULT	2008-01-13
2441	CAR PROWL	2008-01-13
2442	THEFT-BUILDING	2008-01-13

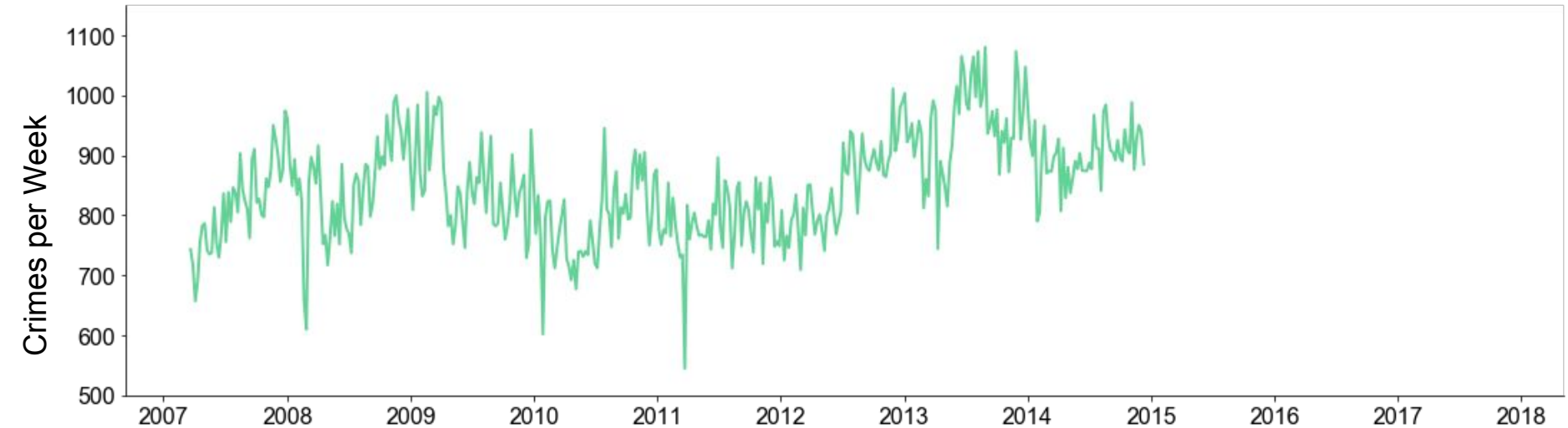
Data Processing

Modeling

Visualization



# Crime Data as Time Series

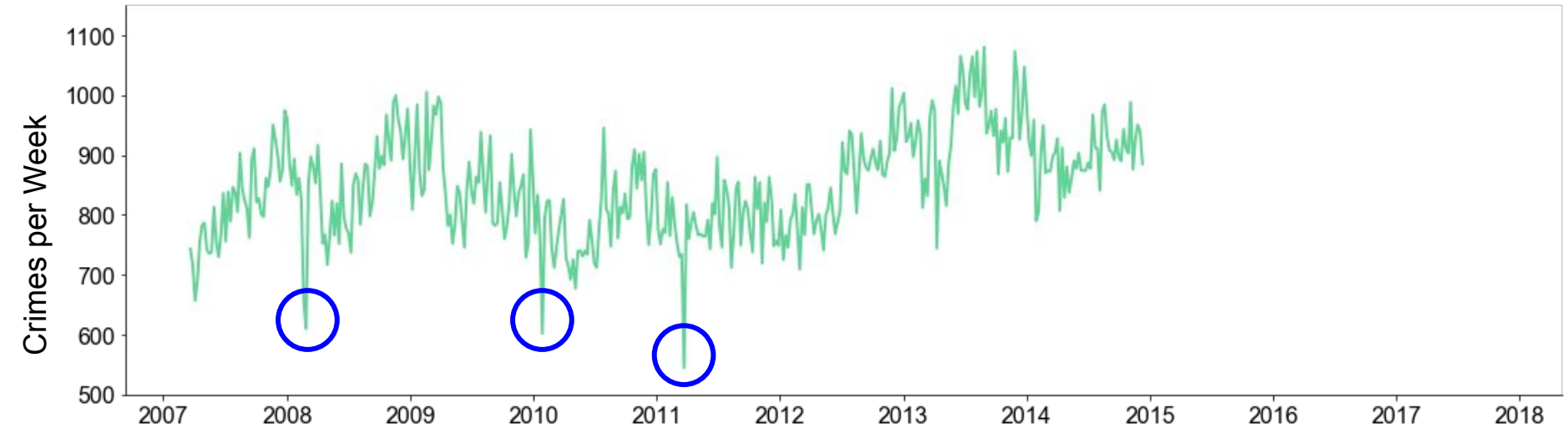


Data Processing

Modeling

Visualization

# Crime Data as Time Series

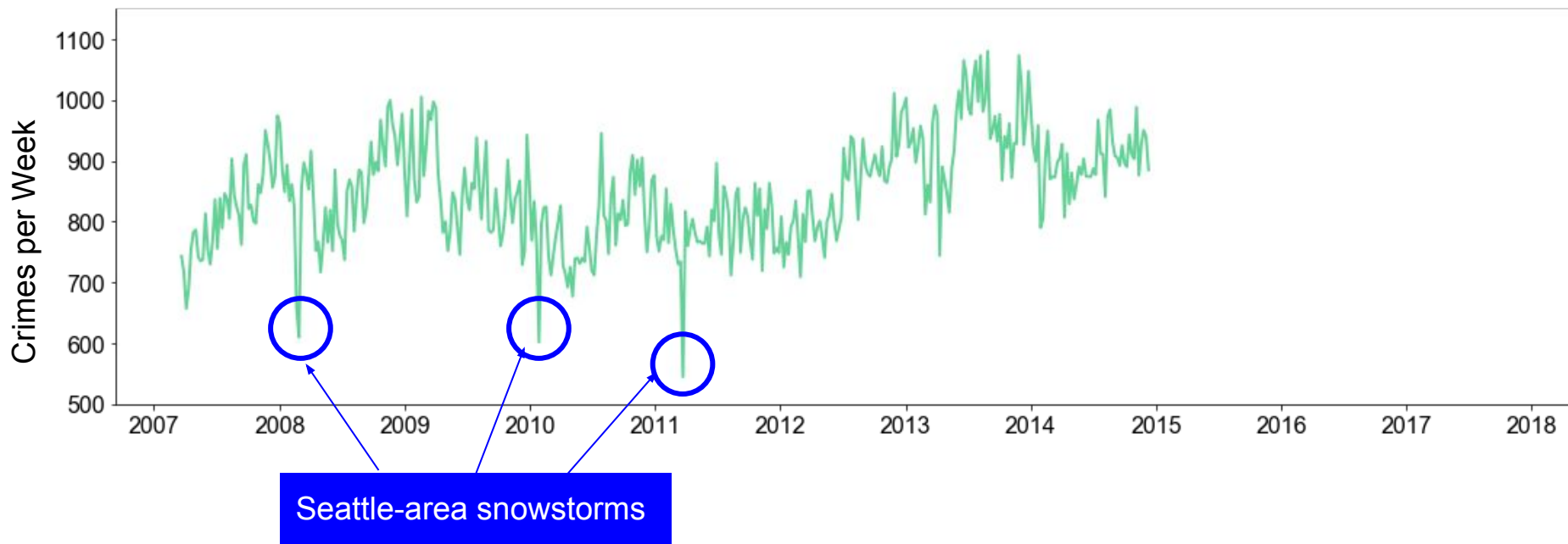


Data Processing

Modeling

Visualization

# Crime Data as Time Series

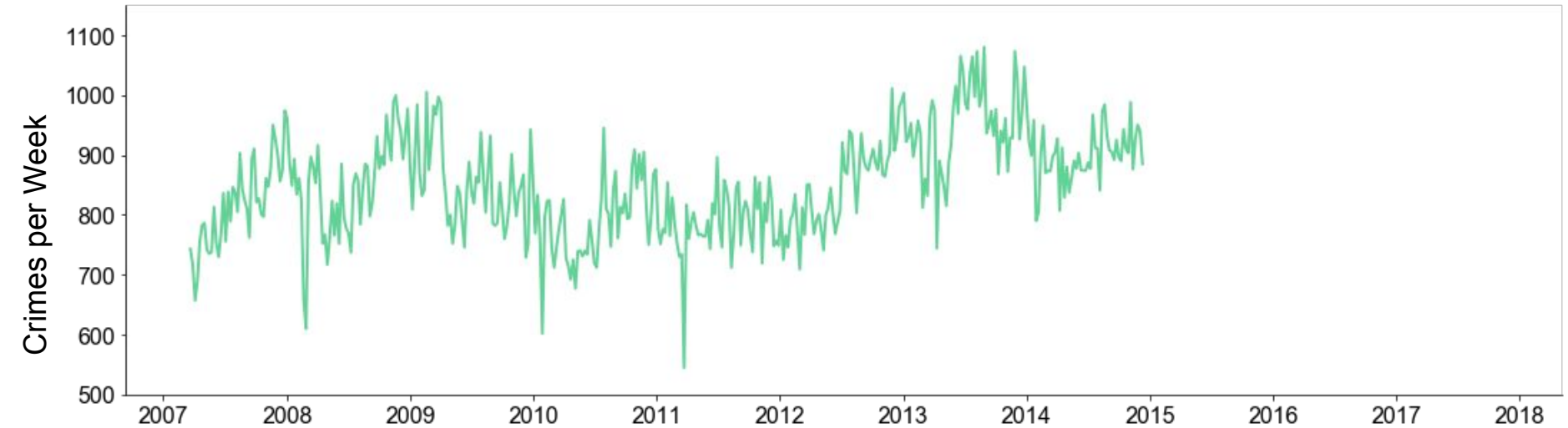


Data Processing

Modeling

Visualization

# Time Series Methods: Naive

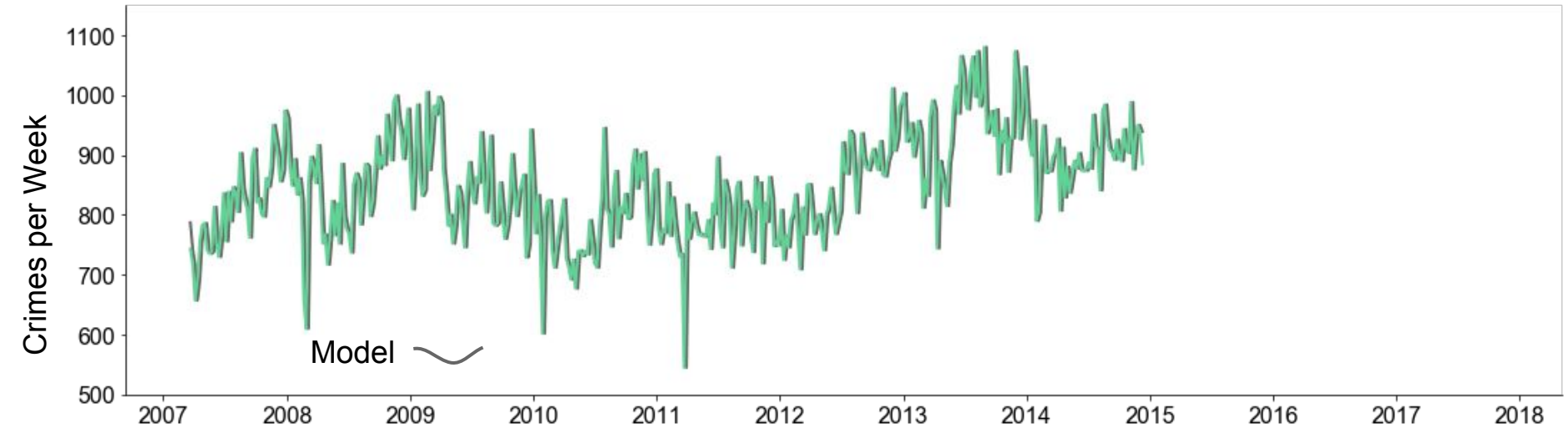


Data Processing

Modeling

Visualization

# Time Series Methods: Naive

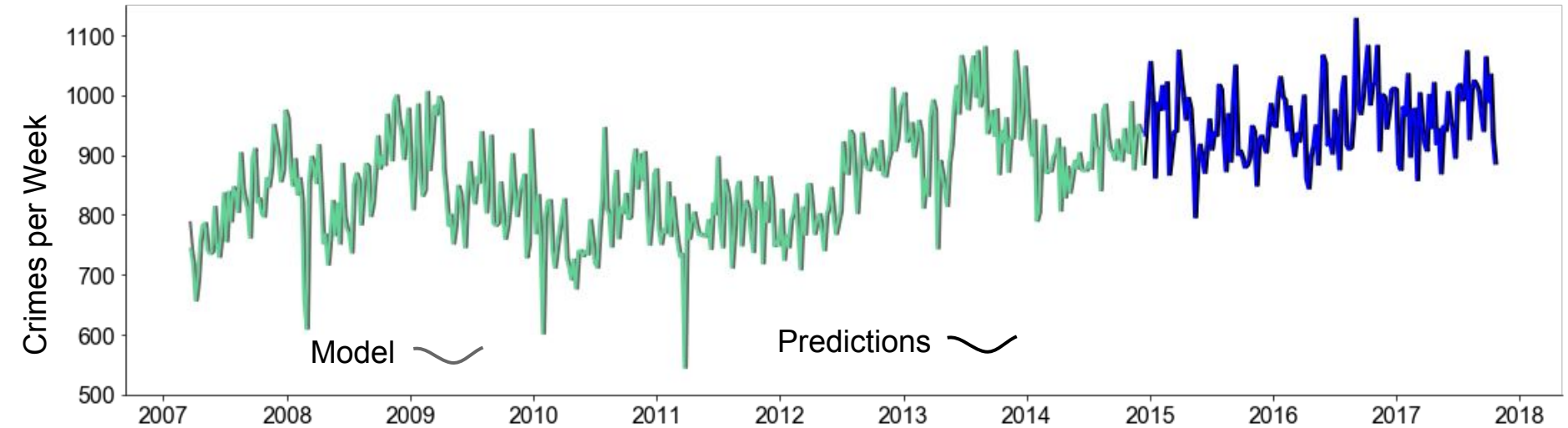


Data Processing

Modeling

Visualization

# Time Series Methods: Naive

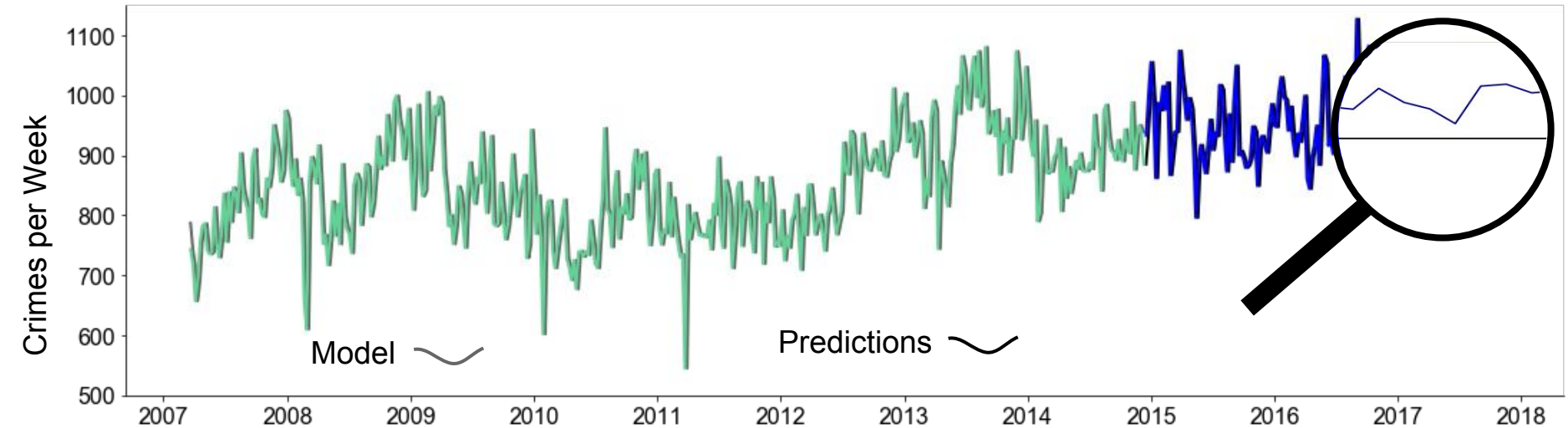


Data Processing

Modeling

Visualization

# Time Series Methods: Naive

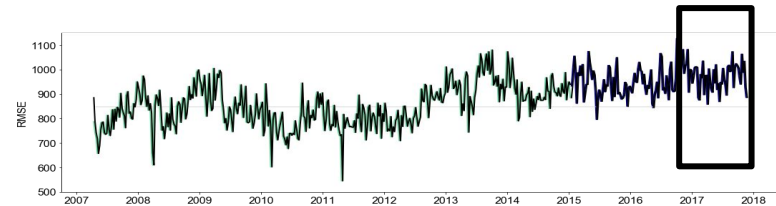
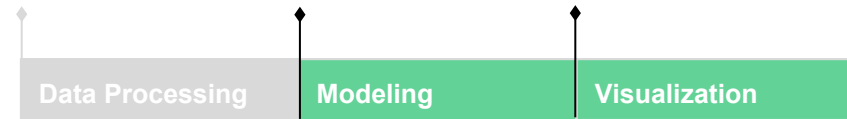
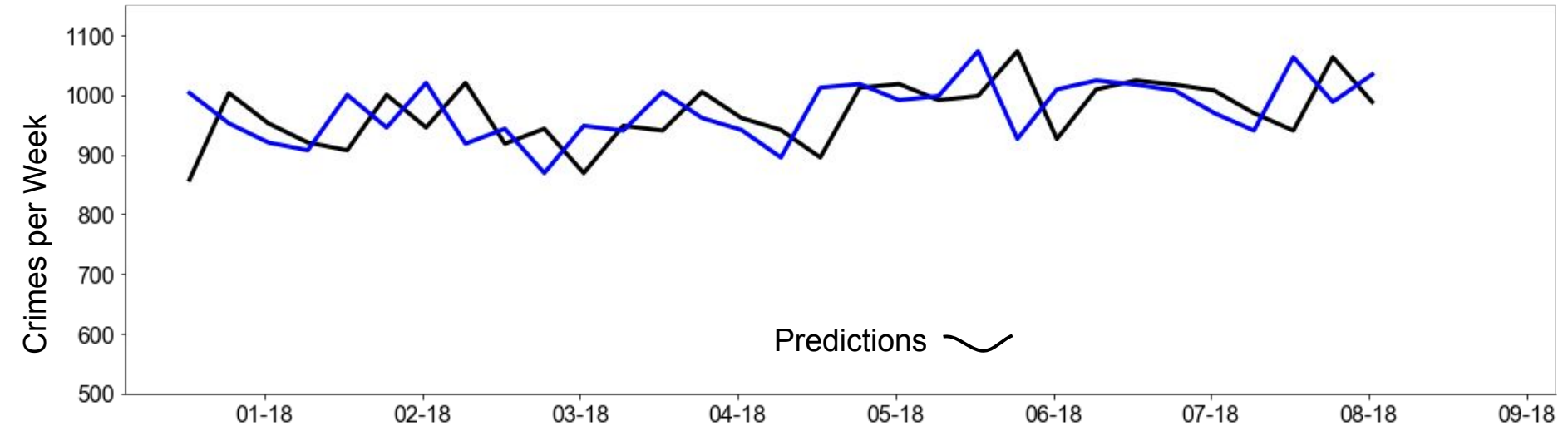


Data Processing

Modeling

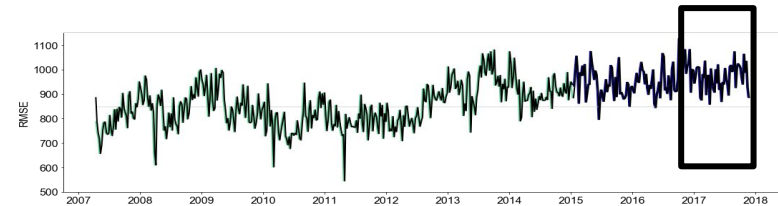
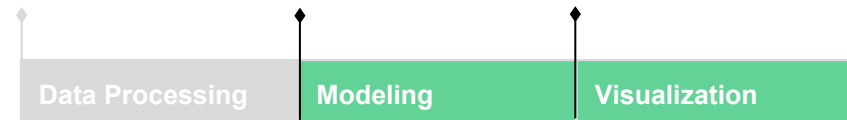
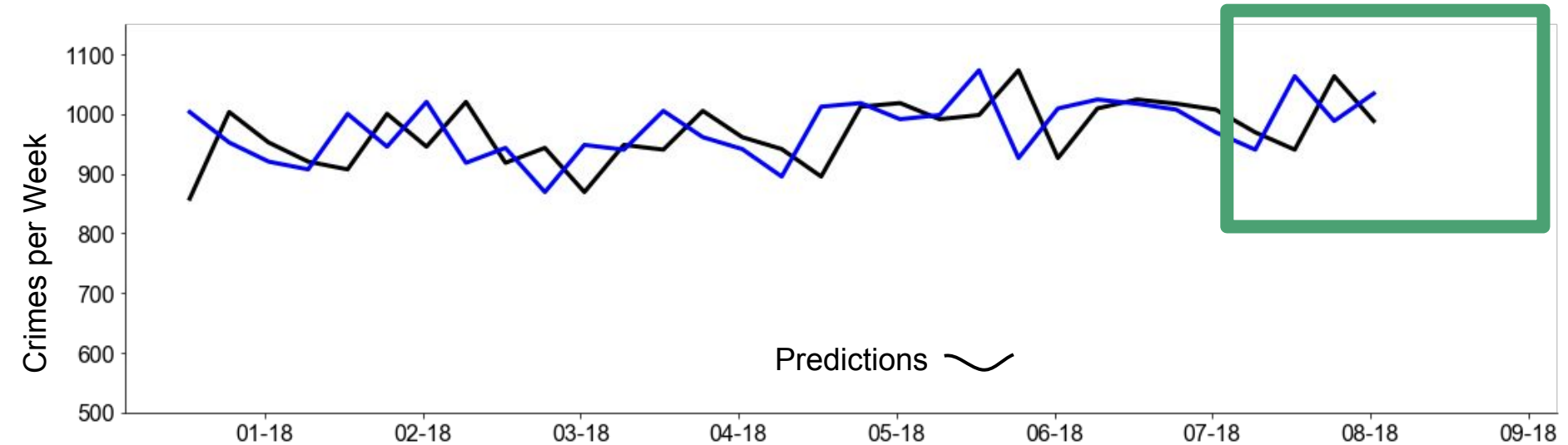
Visualization

# Time Series Methods: Naive

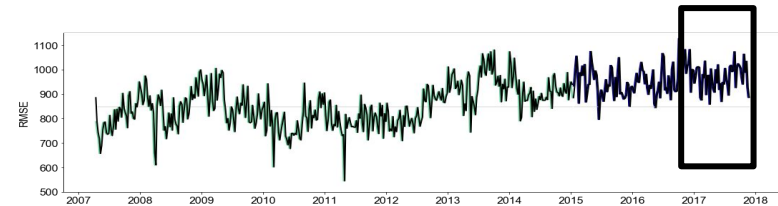
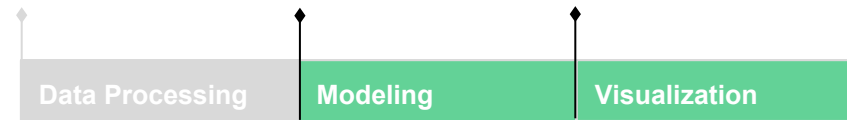
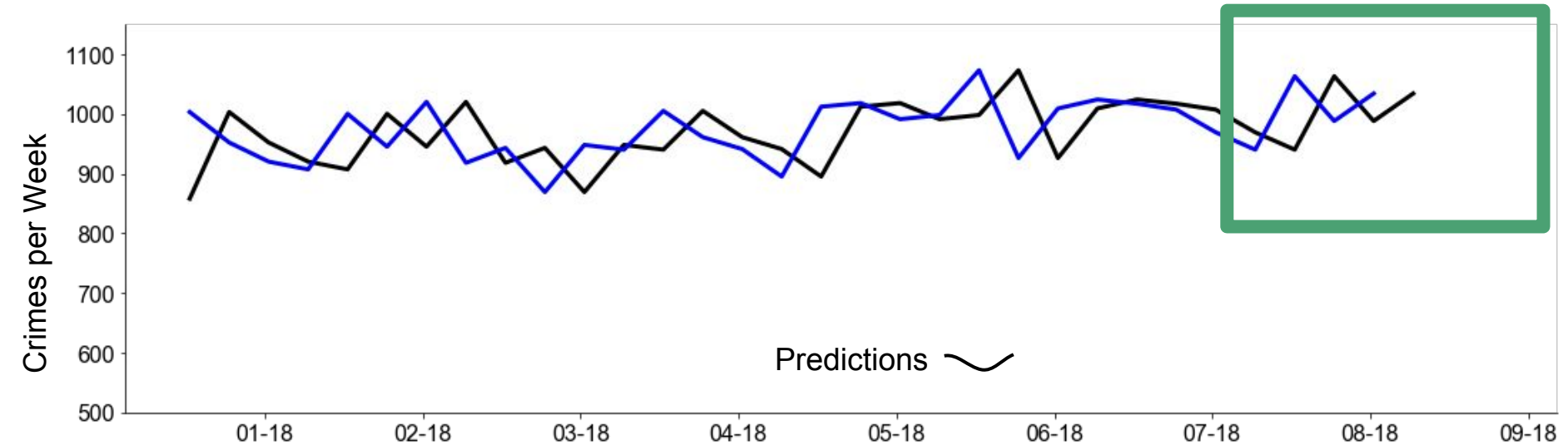




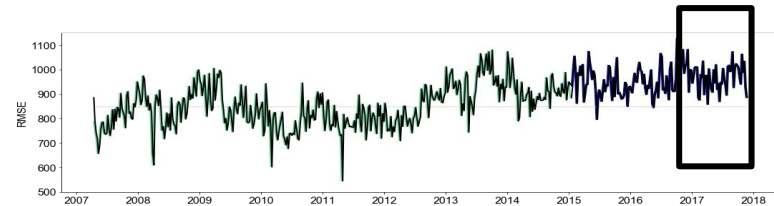
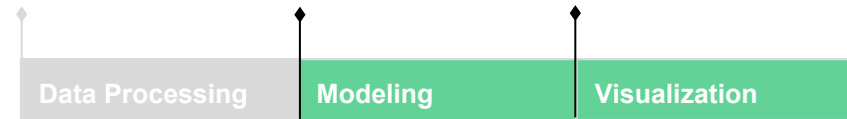
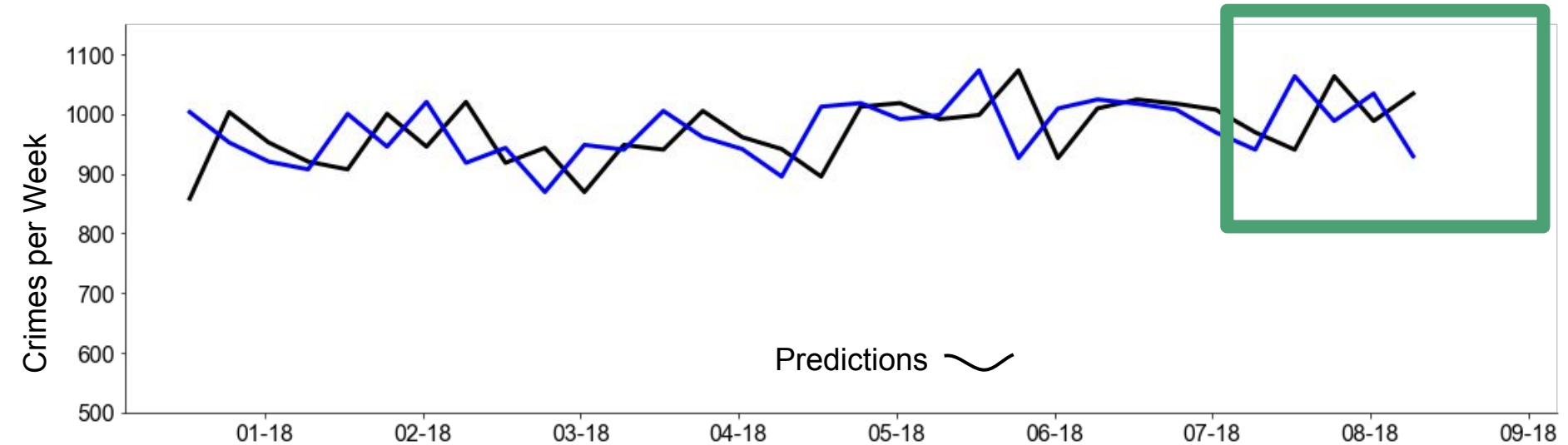
# Time Series Methods: Naive



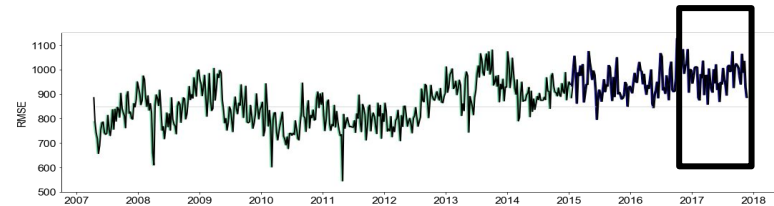
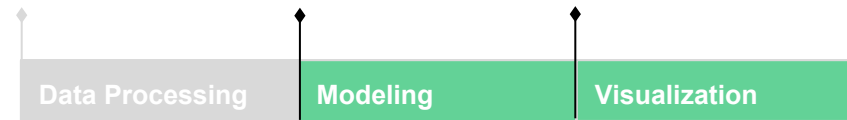
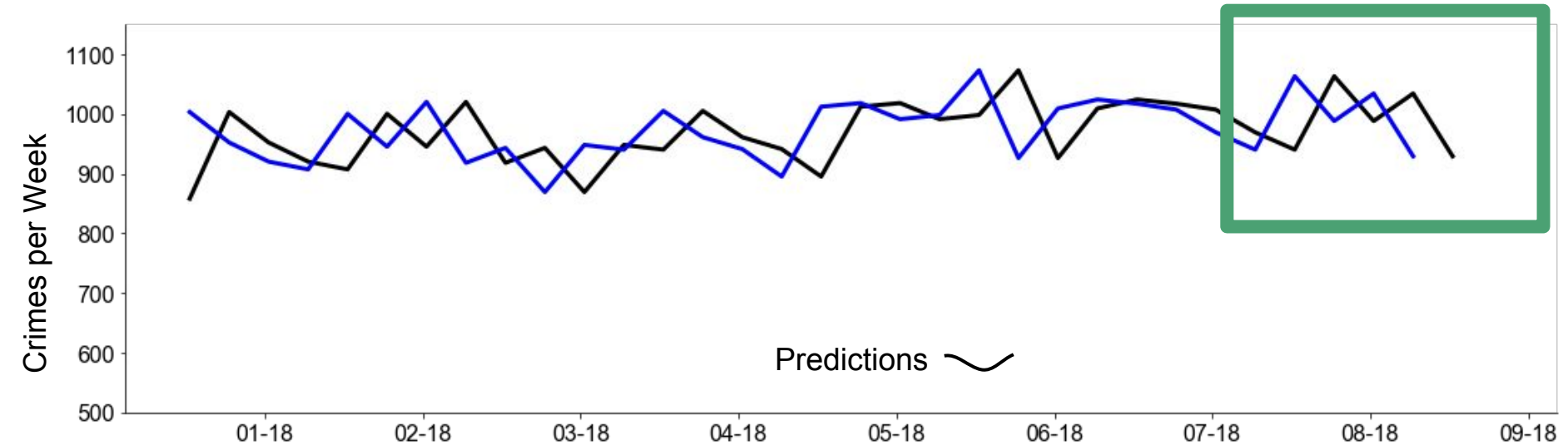
# Time Series Methods: Naive



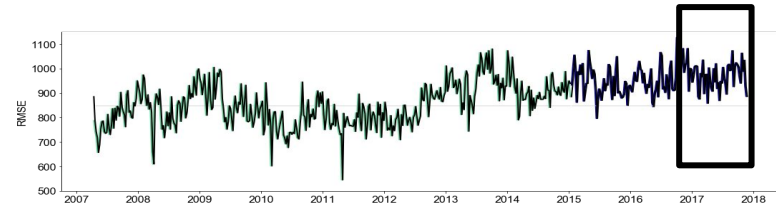
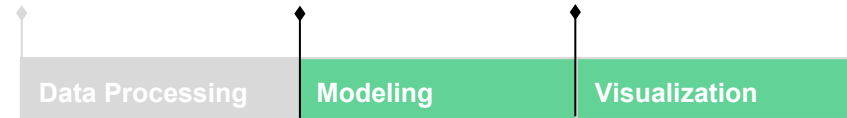
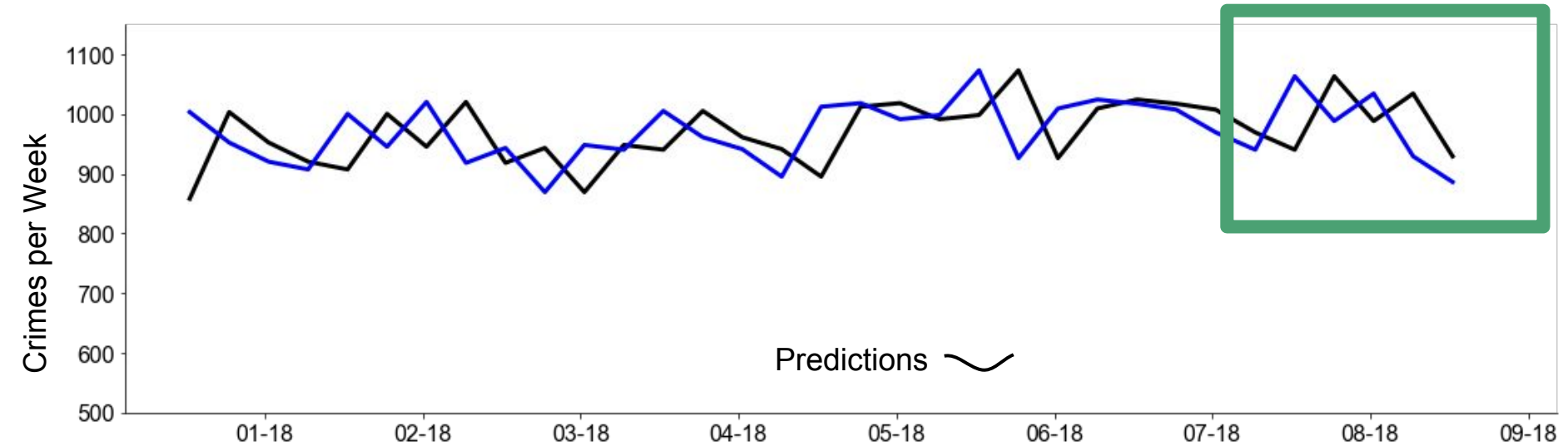
# Time Series Methods: Naive



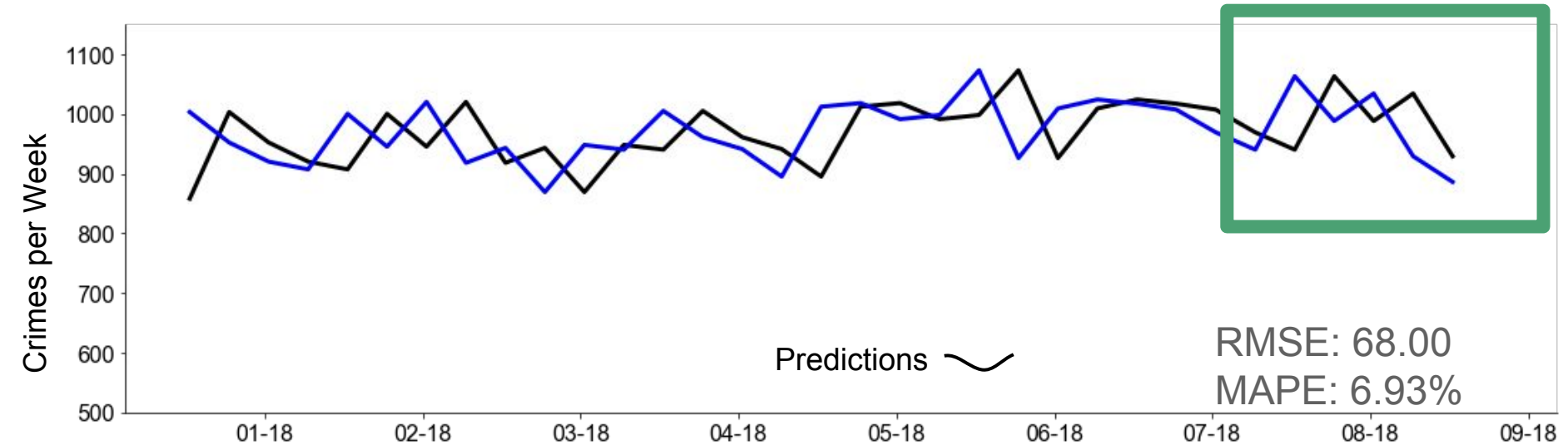
# Time Series Methods: Naive



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# Time Series Methods: Naive



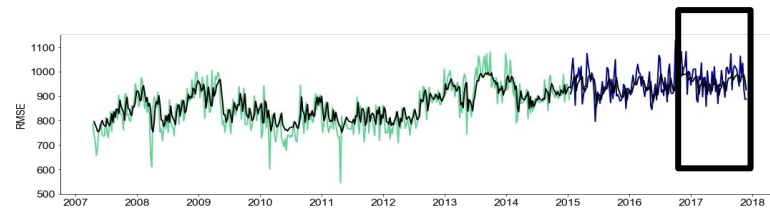
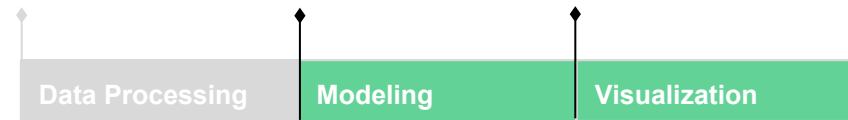
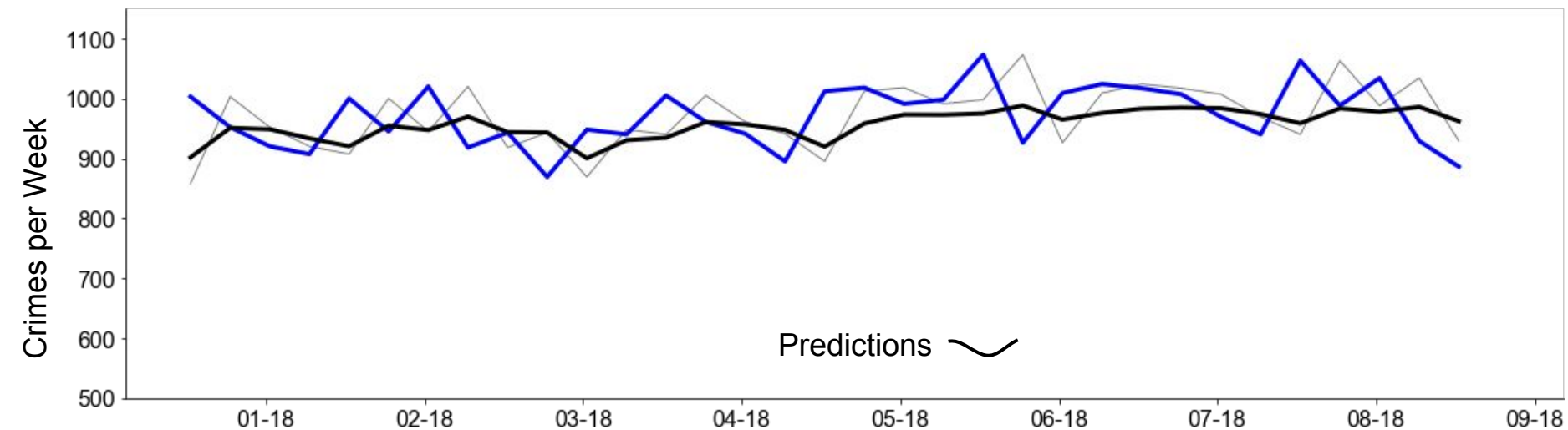
Data Processing

Modeling

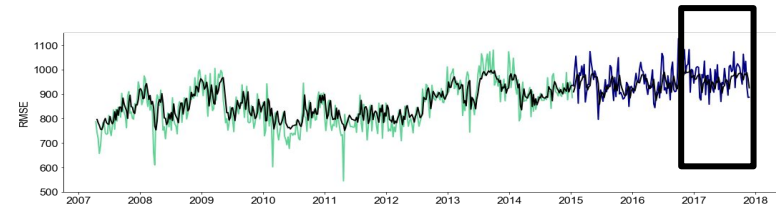
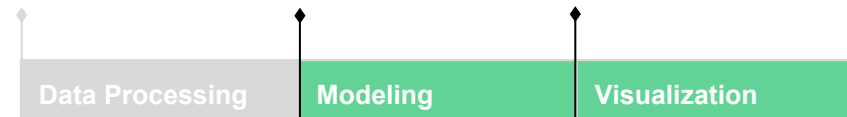
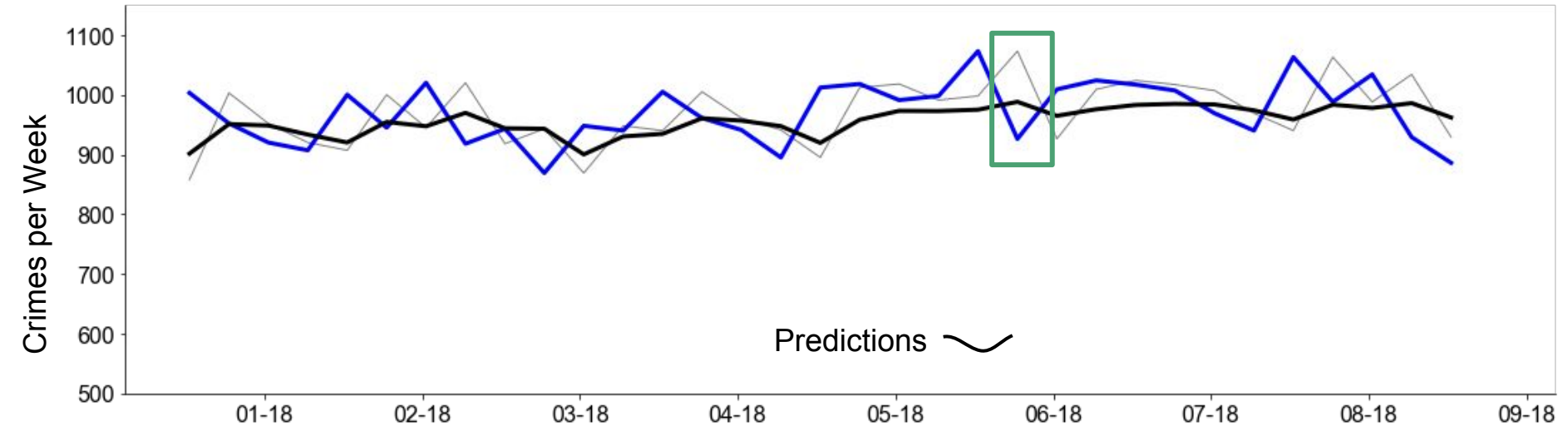
Visualization



# Time Series Methods: LSTM

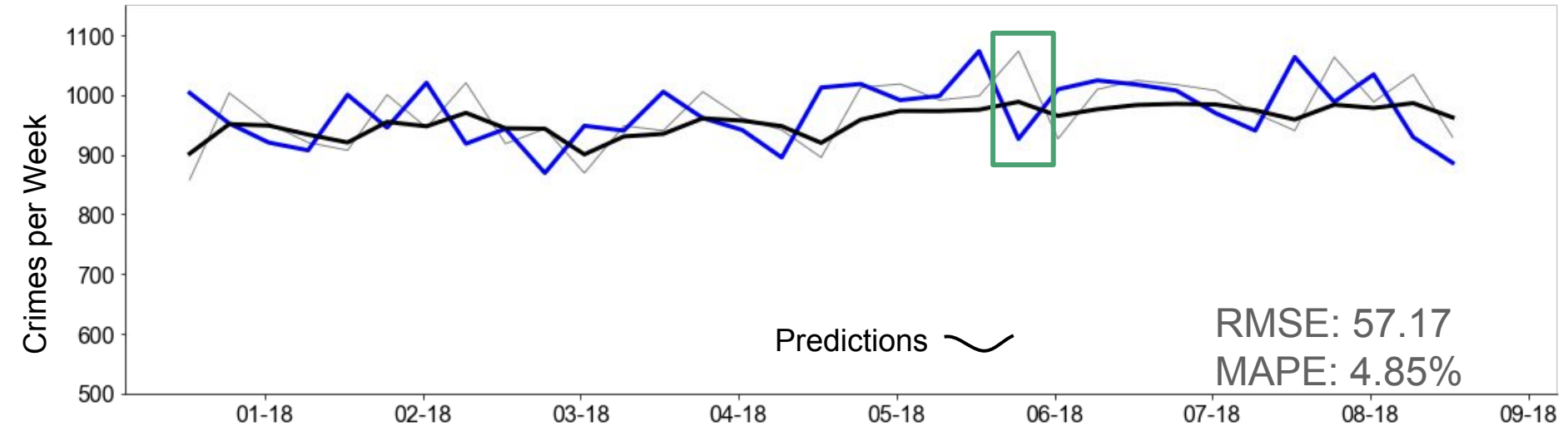


# Time Series Methods: LSTM





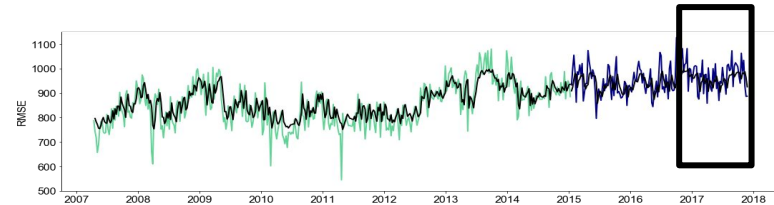
# Time Series Methods: LSTM



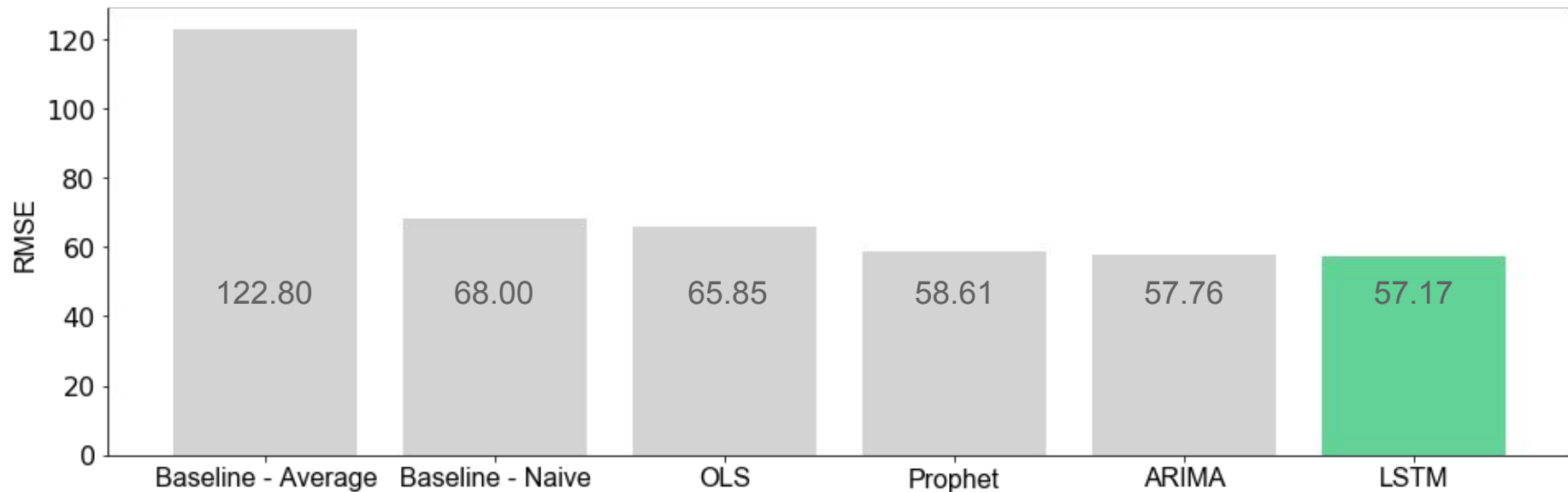
Data Processing

Modeling

Visualization



# RMSE Histogram

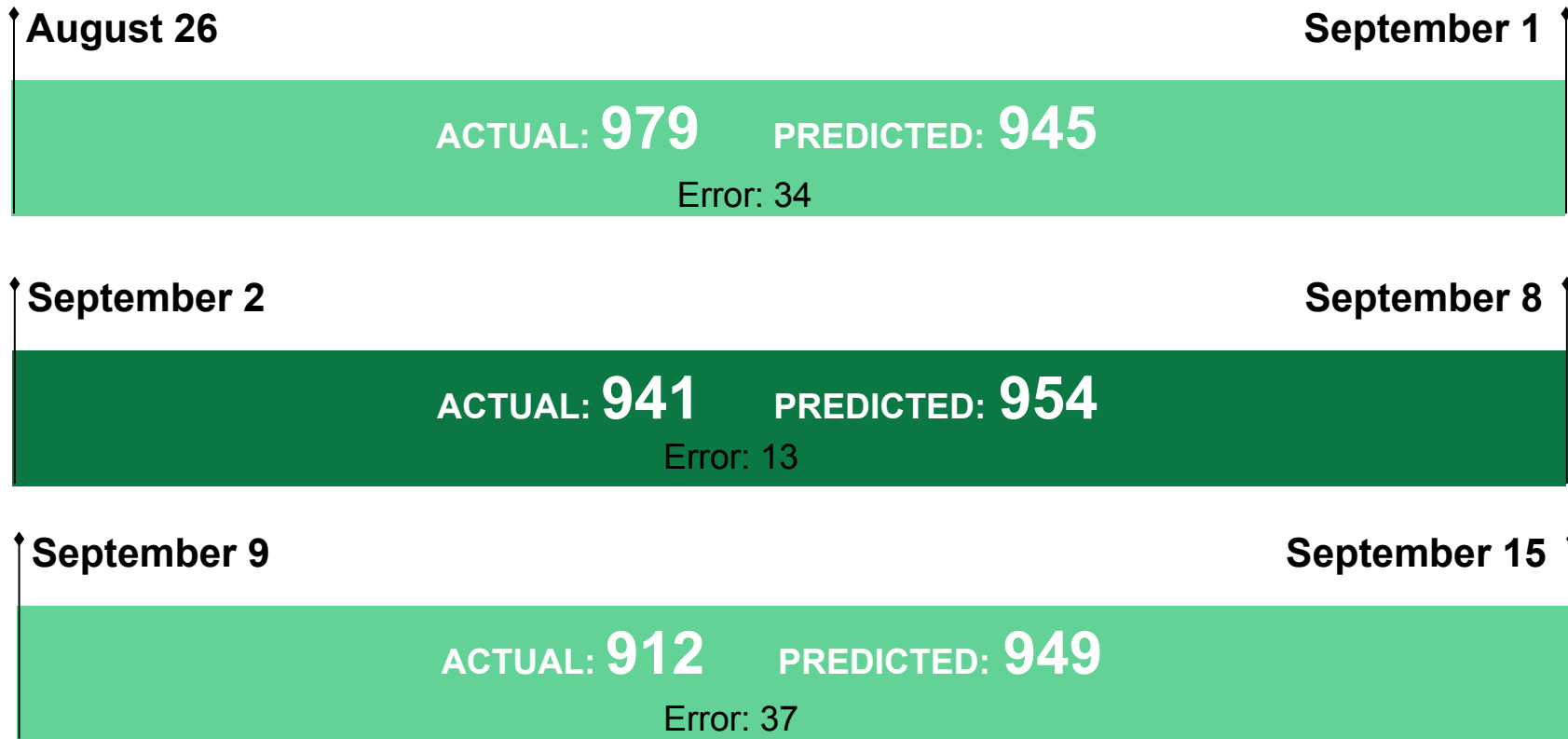


Data Processing

Modeling

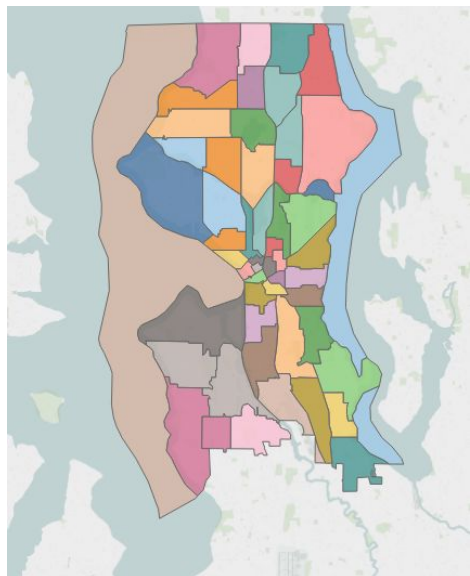
Visualization

# True Model Forecasts



# Going forward...

Forecast by:



Location

2018 SEPTEMBER						
SUN	MON	TUE	WED	THU	FRI	SAT
						<u>1</u>
2	3	4	5	6	7	<u>8</u>
9	10	11	12	13	14	<u>15</u>
16	17	18	19	20	21	<u>22</u>
23	24	25	26	27	28	<u>29</u>
30						

Day



Time

# Thank You and Stay Safe!



Seattle's own crime fighter Phoenix Jones

✉ [bortonlauraj@gmail.com](mailto:bortonlauraj@gmail.com)

🔄 [ljborton](#)

in [laura-borton-59615a16/](#)