

Answering the Calls for Service in Baltimore

Breonna Moore



Objective

- Manage On Duty Staffing
- Forecast Number of 911 Service Calls



Methodology

Collect

7M 911 Service Calls

- Districts
- Date
- Latitude/Longitude

Clean

pandas

$$y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$$

python

Modeling

PROPHET



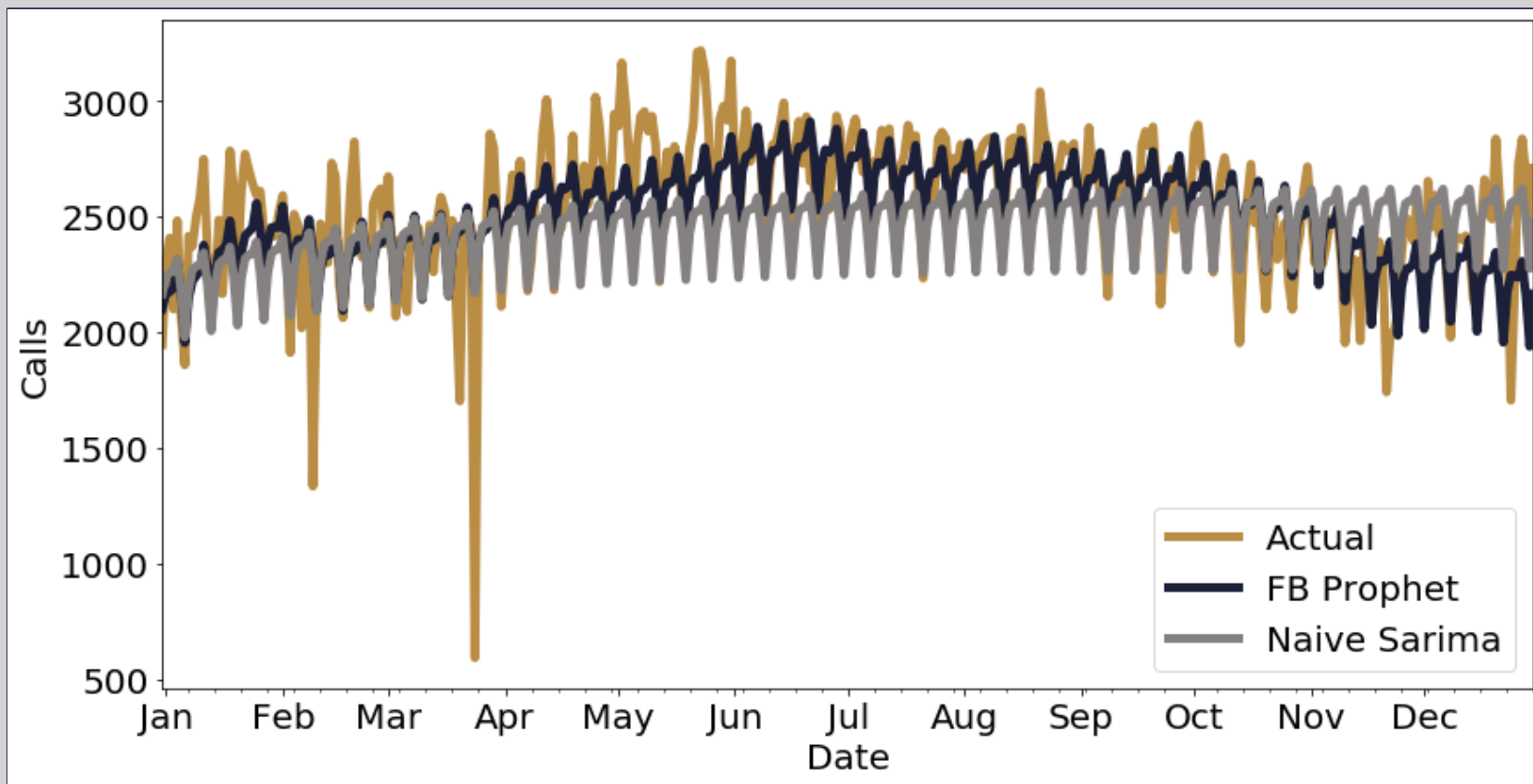
Visualize

matplotlib

tableau



Results



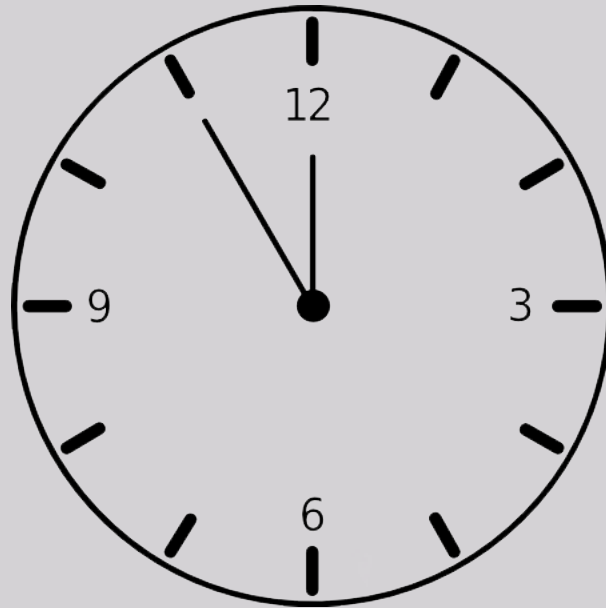
	FB Prophet	Sarima (Naive)
Root Mean Squared Error	\$1.7M Saved/Yr. 216 Calls	268 Calls



Tableau Demo



Future Work





Thank You!

Breonna Moore



Breonna.A.Moore@Outlook.com



Breonna-Moore

Appendix I:

- $OS = (268 - 216 = 52 \text{ calls/day} * 18 \text{ min}/60 \text{ min} = 15.6 \text{ hrs/day overstuffed})$
- $Avg_yr_wage = (\$51,953.00 + \$88,989.00)/2 = \$70,471$
- $Hr_wage = (Avg_yr_wage / 40) / 52 = \33.88
- $OS_per_yr = OS * 365 \text{ days} * HR = 190,065 \text{ for one district}$
- $OS_per_yr * 9 = \$1,710,591$

