

Exelon Use of Analytics

**NRC Regulatory Information Conference
March 11, 2021**

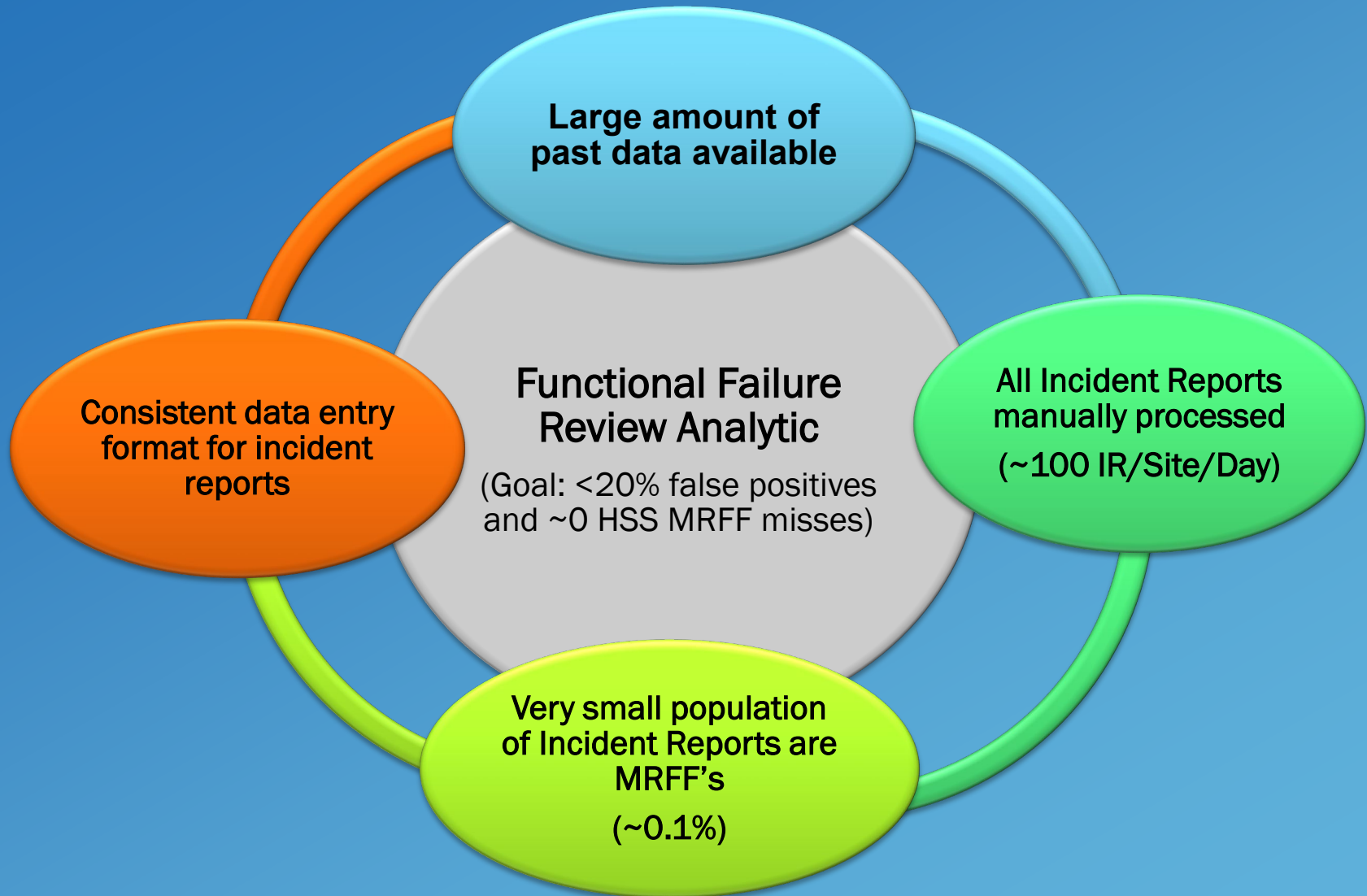
Matthew Retzer

Senior Manager Equipment Reliability



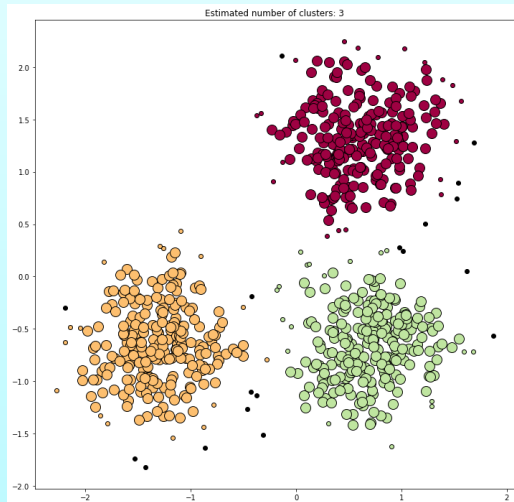
Exelon Generation®

Maintenance Rule Analytic Need



Analytic Methods

Clustering



Natural Language Processing

INPUTS

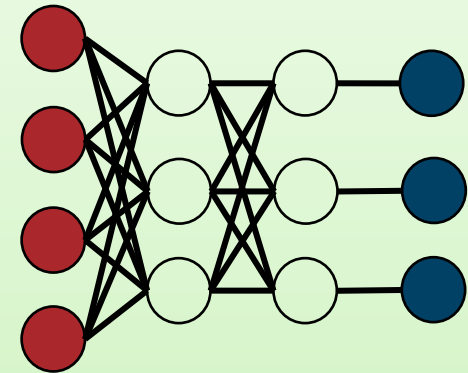
Jack went to the store and bought food.



OUTPUTS

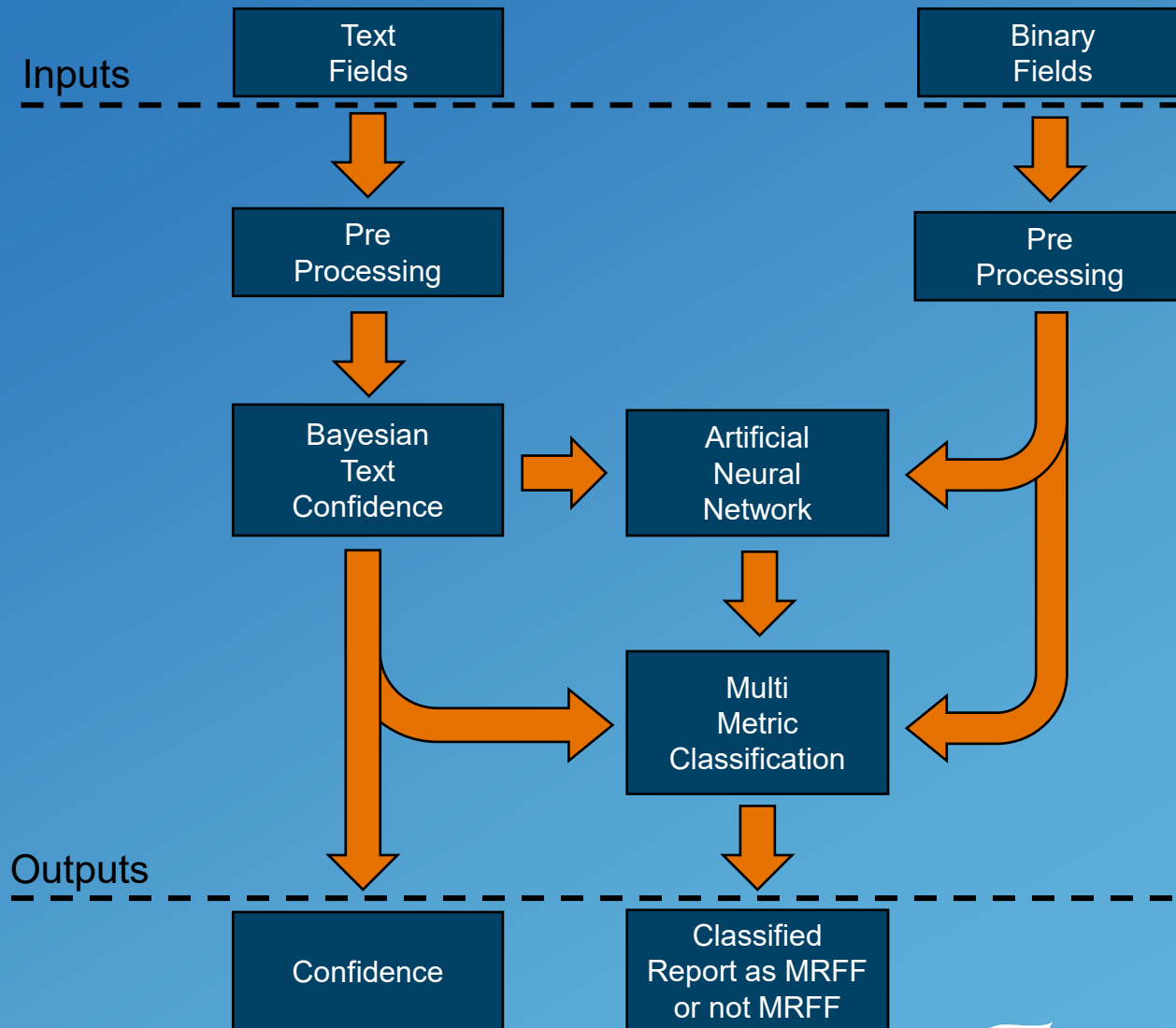
0	Cat	0	Drive	0	Clothes
0	Dog	0	Play	1	Food
1	Person	1	Shop	0	Medicine

Artificial Neural Networks

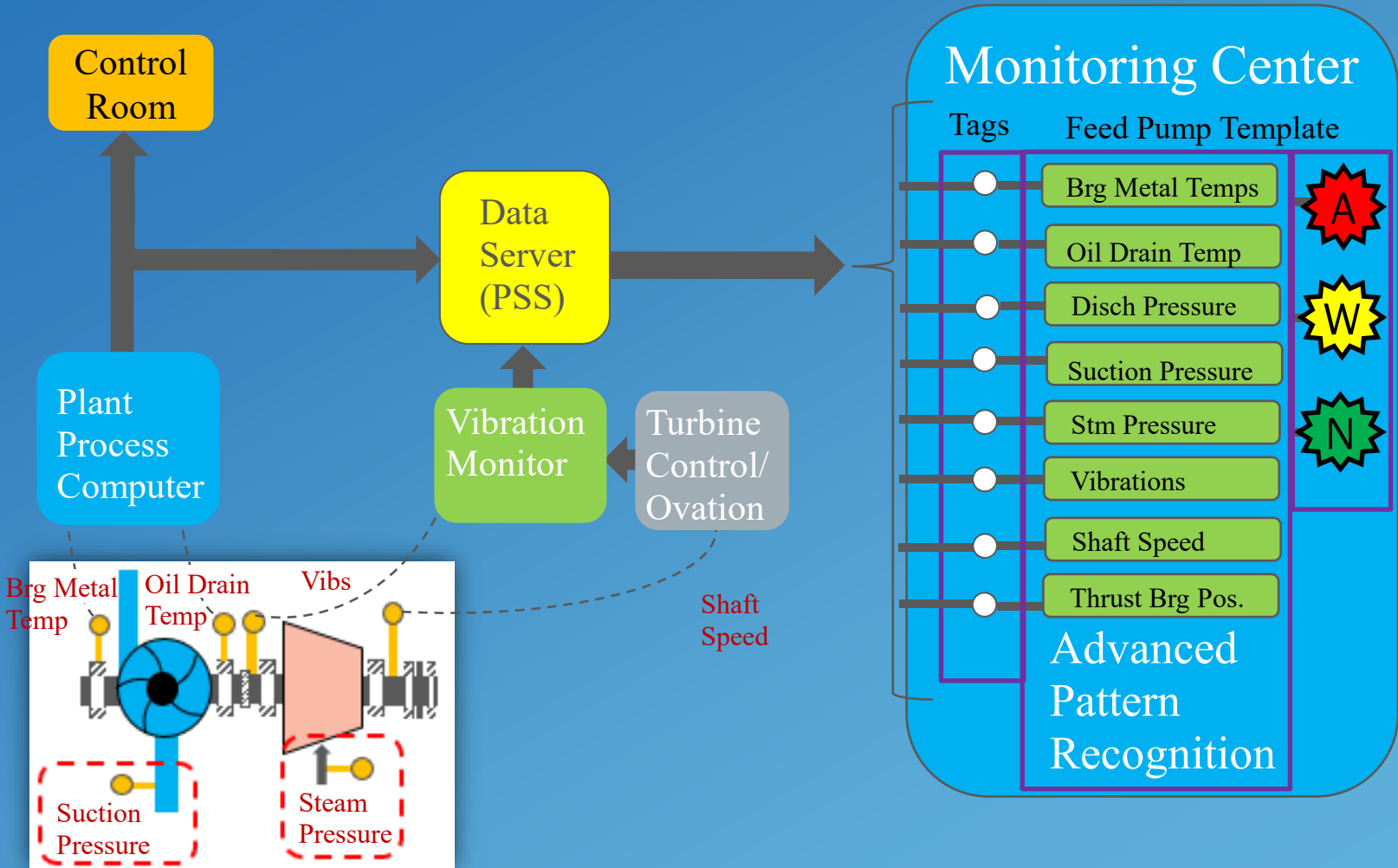


- Input Neurons
- Hidden Neurons
- Output Neurons
- Learned relationships

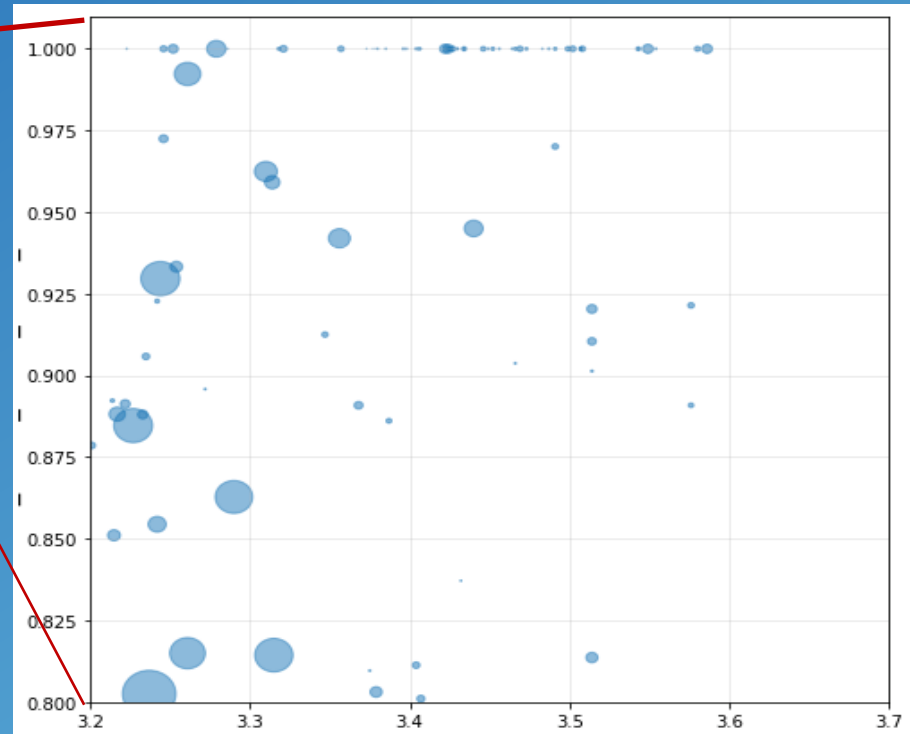
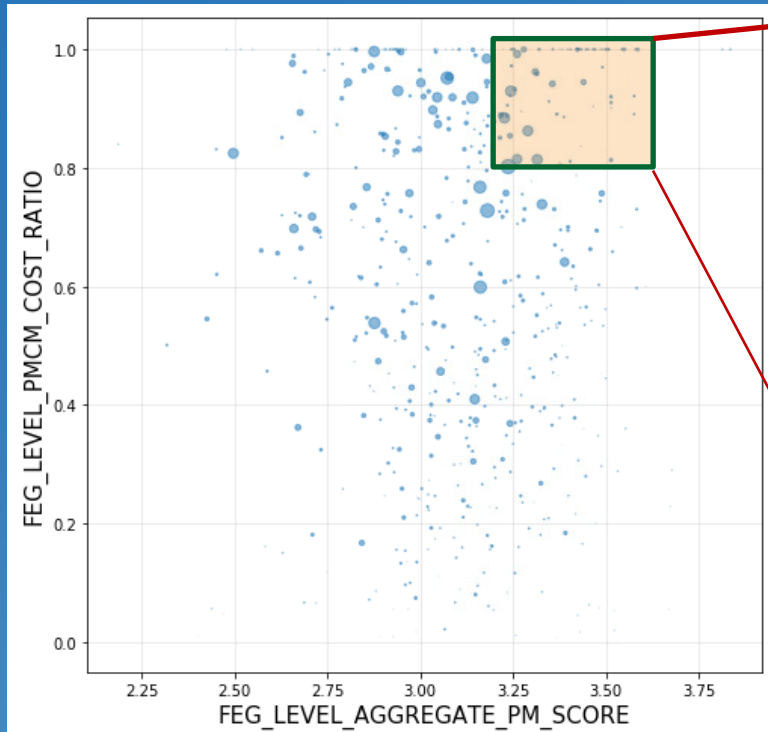
Maintenance Rule Analyzer Structure



Advanced Pattern Recognition



Maintenance Strategy Optimization



- Aggregate score based upon
- As-found condition
 - Frequency
 - amount of corrective maintenance vs. preventative
 - Criticality of component

Circle size if base upon cost