APS Failure in Trucks

Matthew Melendez
matthew.melendez@enhanceit.us
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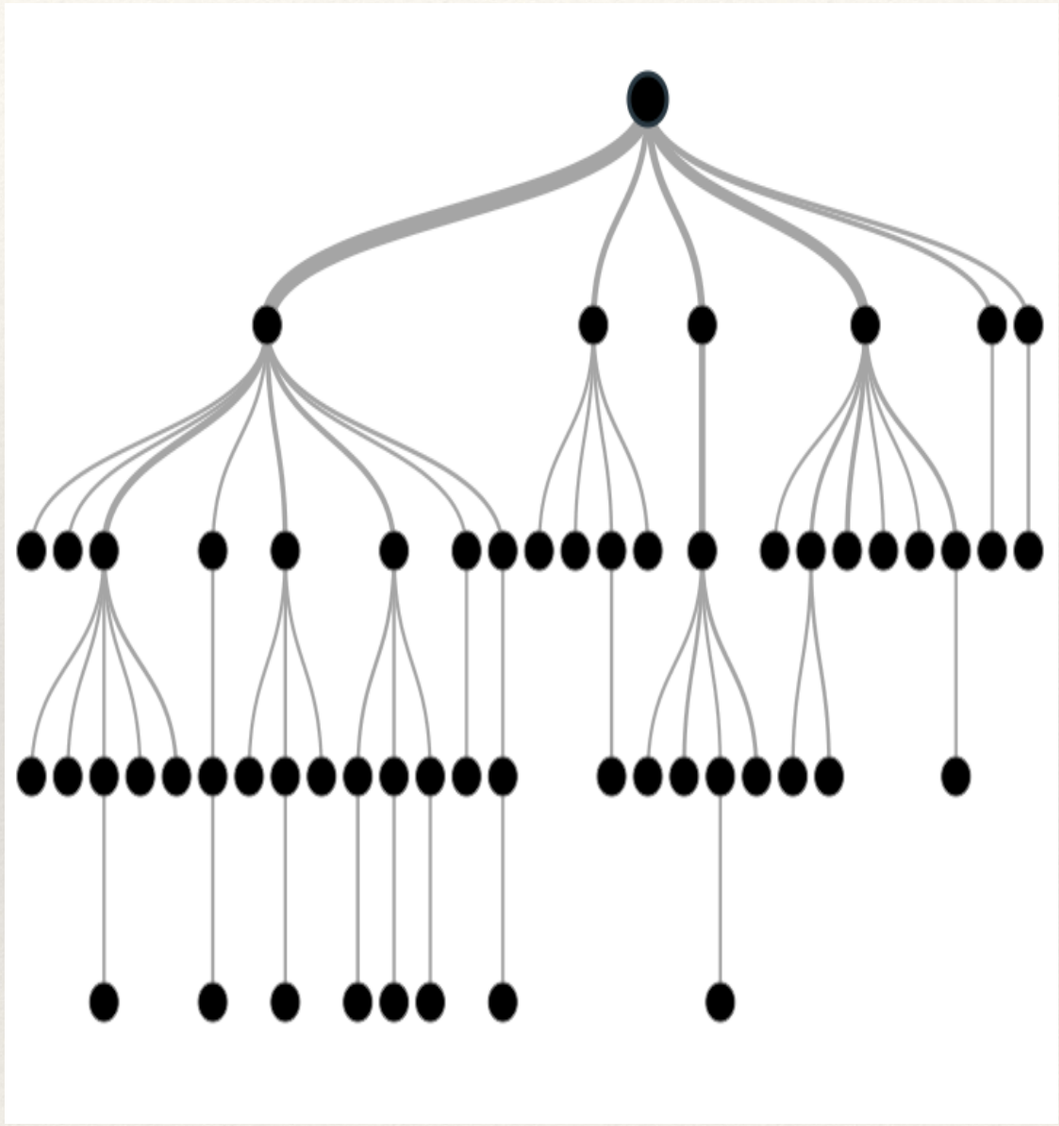
Presentation to the Board

Task

- Minimize Maintenance Repair Costs for Trucks
  - $10 per unnecessary APS check
  - $500 per missed fault, leading to APS failure
- Predict and minimize costs associated to failures of a truck's APS

Results

- **Random Forest Algorithm with Bootstrapping**



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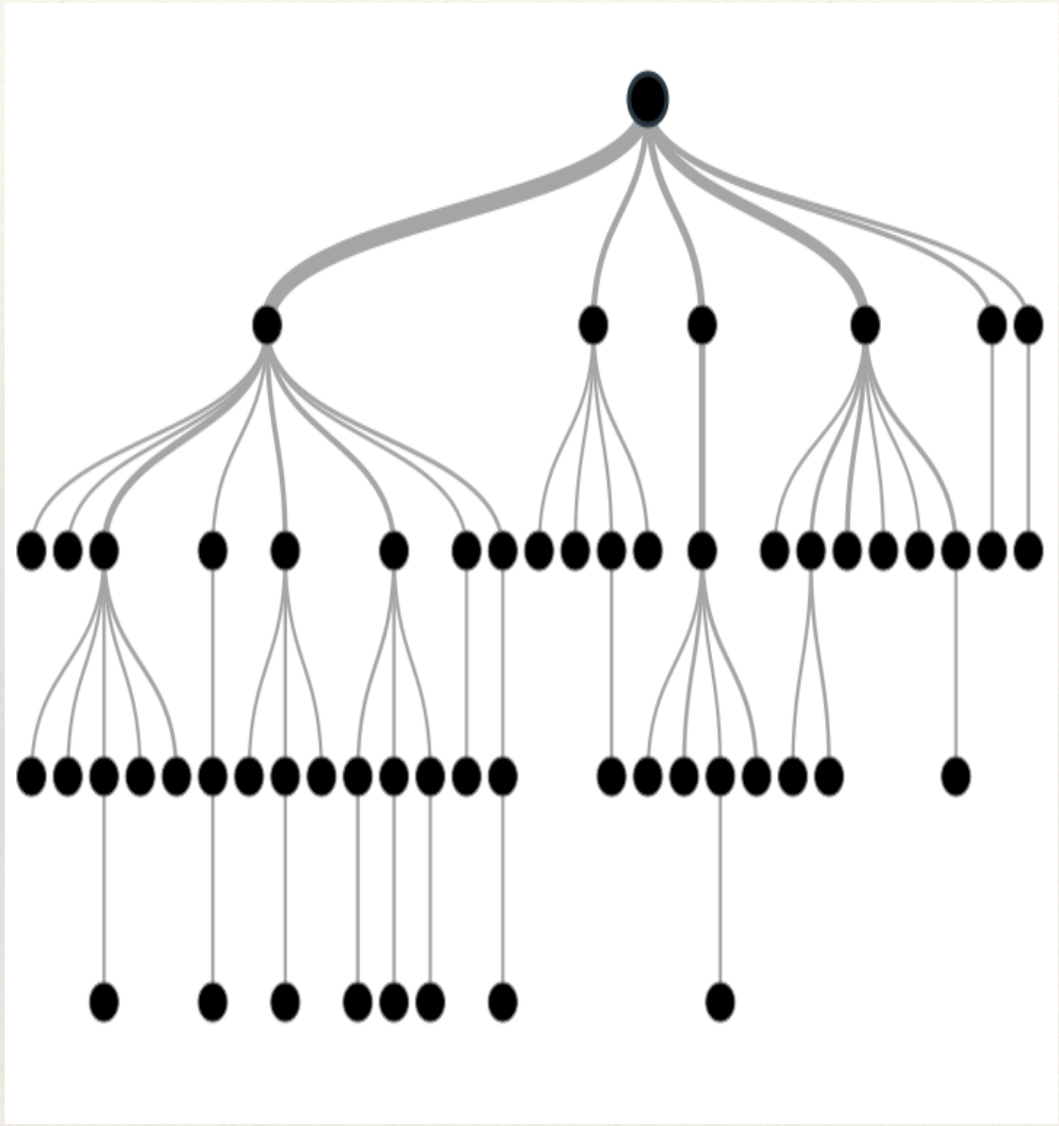
Results

- **Random Forest Algorithm with Bootstrapping**
- Cost: $0.59 / truck*



*calculated from a minimum cost of $9,320 for a 16,000 truck test set

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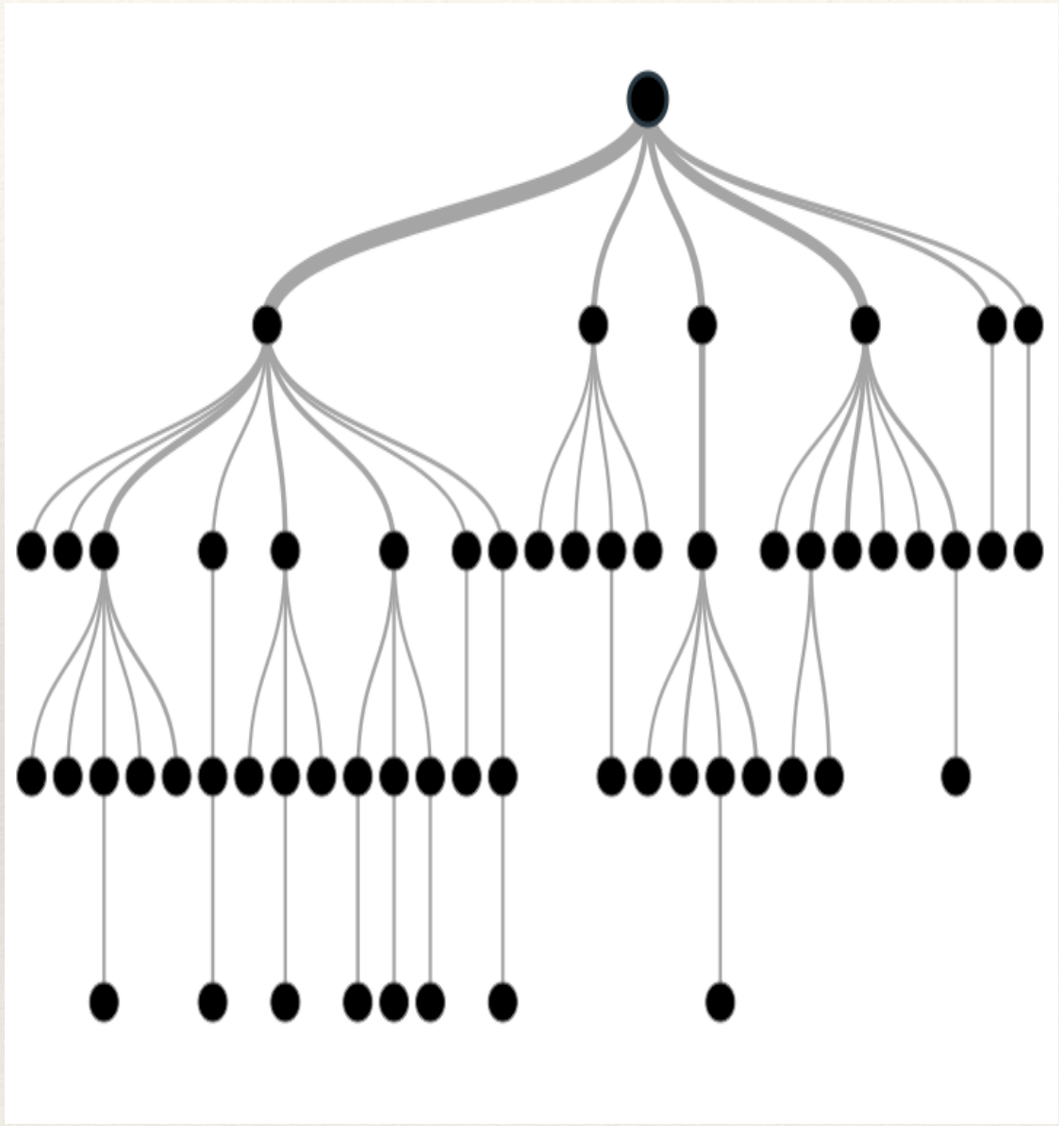
Results

- **Random Forest Algorithm with Bootstrapping**
- Cost: $0.59 / truck*
- Recall value: 0.98



*calculated from a minimum cost of $9,320 for a 16,000 truck test set

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Results Summary

- Truck APS Failure Cost: $500.00 / truck
- Truck APS Check Cost: $10.00 / truck
- Predictive Model Cost: $0.59 / truck

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Future Work

- Understand the dataset better
  - Better feature selection
- Tune model
- Testing different models
- Scale model up to full dataset
- Collaborate with implementation team

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