Storm-based Outage Prediction to Aid Crew Dispatching Decisions Progress Phase

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INDUSTRIAL AND SYSTEMS ENGINEERING

Key Project Members

NC State, Industrial & Systems Engineering

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North Carolina Electric Cooperatives (NCEC)

- John Lemire **(Vice President, Grid Operations & Planning)**

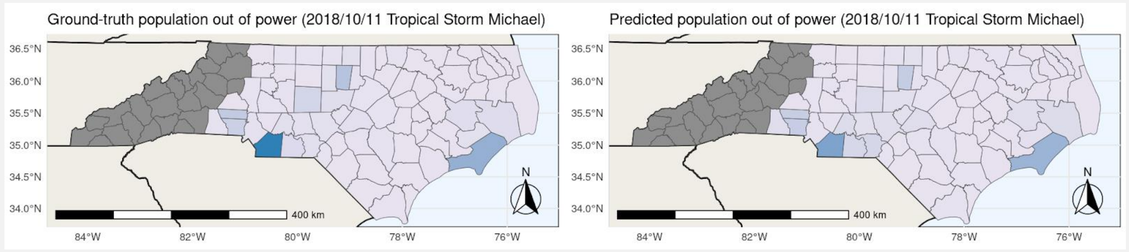
Solution Impact

Progress

- Work with NCEMC to identify key variables and use cases for outage prediction model
- Trained statistical model on public outage data
- Out of sample R^2 >0.6 with Gradient Boosted Trees

Results

- Tested model on historical use cases
- **Hurricane Michael: 90%** of counties with severe outages identified
- **Hurricane Florence: 82%** of counties with severe outages identified
- **Tropical Storm Elsa: 100%** of counties with severe outages identified
- **April 2019 Thunderstorms: 88%** of counties identified



Note: Actual power outage data in these figures comes from public sources (PowerOutage.us) and is neither confidential nor proprietary

Future Directions

Forecast Data & Operational Integration

- Graphical user interface
- Integrate real-time weather forecasts
- Assess predictions based on operational needs
- Additional statistical model refinement

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