# **Anthony (Tony) ElHabr** — Operations Engineer at ERCOT | MS Analytics at Georgia Tech

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## Work Experience

**Operations Engineer, Grid Analysis | Electric Reliability Council of Texas (ERCOT) | 12/2018 - present**

Develop tools and procedures to monitor transmission and generator events on the grid in real-time and up to 90 days in the future.

- *Trend Analysis Tool:* Develop and maintain web-based BI displays for analyzing daily market and operations data.
- *N-2 Tool:* Developed scripts for high performance power flow tool to evaluate high-impact N-2 contingencies daily.
- *Panhandle Constraint Analysis:* Evaluated operational and economic benefits of alternative methods for calculating Panhandle generic transmission limit.
- *2019 Summer Analysis:* Gathered data and created visuals for outages and ancillary services in review of ERCOT's "tight" 2019 summer.
- *Voltage Profile Seasonal Studies:* Conduct seasonal studies coordinated with Transmission Service Providers (TSPs) to define generator voltage setpoints.

**Market Operations Engineer, Congestion Revenue Rights (CRR) | ERCOT | 6/2017 - 12/2018**

Prepared data for CRR auctions (twice a month), and validated and analyzed results.

- *Price Convergence:* Evaluated correlations among settlement point prices across markets. Created price contour maps.
- *Bidding Behavior:* Studied popularity of "penny bids", fixed hedges, and portfolio diversity among CRR participants.
- *CRR Validation:* Led group in developing automated tool to perform checks of CRR optimization software.

**Power Systems Engineer, Engineering Development Program (EDP) | ERCOT | 7/2016 - 5/2017**

Completed 12-month program to provide entry-level engineers with skills for becoming successful in power industry.

- *5-Minute Wind Forecast Analysis:* Evaluated ARIMA models for market design proposals and analyzed accuracy of vendor's forecasts.
- *Daily Market Summary Improvements:* Revised real-time (RT) and day-ahead market-(DAM) queries and re-factored post-processing code.
- *NOX Emissions Sensitivity Analysis:* Evaluated impact of varying NOX emission allowance costs on generation dispatch.

## Other Experience

**Data Science Group Leader, ERCOT Data Science Group (Internal) | ERCOT | 9/2017 - present**

- Schedule speakers for periodic meetings discussing data science concepts and their implementation.
- Personally given 4 presentations: (1) R and the "tidyverse"; (2) logistic regression; (3) live-coding of assigned exercises; (4) SQL tips.
- Held 21 meetings total (as of Dec. 2019), averaging 15 - 25 attendees per meeting.

**EDP Reach Co-Chair | ERCOT | 1/2019 - present**

- Co-lead group of alumni (20+) from ERCOT's EDP in planning and running at least five different outreach events every.
- Organized full-day, on-site event for college student networking (30 students) in Sep. 2018.

## Internship Experience (Undergraduate)

- Instrumentation Engineering Intern, ExxonMobil
- Monitoring & Diagnostics Systems Support Intern, Luminant / Vistra Energy
- Electric Distribution Planning & Computer Support Co-op, CenterPoint Energy

## Education

**MS Analytics, Spring 2020, Georgia Institute of Technology, GPA: 3.6/4**

Working towards degree (2 classes per semester) while working full-time.

- *Notable Classes:* Discrete Optimization, Simulation, Bayesian Statistics, Machine Learning, Regression Analysis, Time Series Analysis
- *Work Experience:* Teaching Assistant, Time Series Analysis (Spring 2020)

**BS Electrical Engineering, May 2016, The University of Texas at Austin, GPA: 3.85/4**

- *Honors & Societies:* Engineering Honors Program Member, Cockrell Scholarship Recipient; Officer/Member of IEEE Power and Energy Society Student Branch
- *Work Experience:* Teaching Assistant, Electronics Circuits (Spring 2016); Academic Tutor, multiple Engineering classes (2016)

## Skills & Abilities

- *Advanced:* R, SQL (Oracle), VBA (Excel), Windows OS, Microsoft Office Suite
- *Intermediate:* python, SAS, JavaScript (Plotly, D3), HTML/CSS, git, C#, .NET Web Framework, PowerWorld, PSSE
- *Other:* C/C++, x86 assembly language, MATLAB, UPLAN