Mark Ditsworth

Dallas, TX
markditsworth@protonmail.com
www.linkedin.com/in/markditsworth
www.twitter.com/markditsworth
www.github.com/markditsworth

Work Experience

Apr 2019 – Present

Capital One

Data Engineer

– Modularized and increased reliability of automated deployments of the Elastic stack and Apache NiFi clusters.

Jul 2018 – Apr 2019

Raytheon, Information & Intelligence Services

Systems Engineer

– Created a Bayesian statistical model to predict an interval of high likelihood for security clearance investigation completion. An average error of ±5 days was observed.

Jun 2014 – Jul 2018

Renewable Energy & Vehicular Technology Lab

Graduate Research Assistant

– Coded a reinforcement learning algorithm for training a fault-tolerant microgrid controller.
– Architected and implemented cloud applications for IoT data collection and processing for real-time fault diagnostics.
– Constructed the prototype for a novel method for tolerating misalignment in wireless power transmission coils.
– Served as team captain in 2015 IFEC, designing and building a wireless EV charging system.

Projects & Activity

2019 **ArXiv Paper Downloader**
Twitter bot that downloads user-tagged arXiv links posted on Twitter.

2019 **PyGA**
Python package for genetic algorithm optimization.

2019 **Vaccination Strategy Optimization**
Modeled the spread of an infection in a social network with Monte Carlo simulations to optimize a vaccination campaign.

2018 **Reddit Bot Account Detection**
Modeled Reddit comment activity as a directed network to identify bot accounts based on content agnostic features.

2017 **Intel Hacks – Unoccupied Vehicle Safety and Monitoring**
Notification of vehicle accidents while driver is absent.

Education

2017 – 2019 **M.S. Systems Engineering**
University of Texas - Dallas
Thesis: Modeling semiconductor degradation

2017 – 2018 **Machine Learning Nanodegree**
Udacity
Capstone: Binary classification of manufacturing defects

2013 – 2017 **B.S. Electrical Engineering**
University of Texas - Dallas
Magna Cum Laude

Publications

2019 **Community Detection via Katz and Eigenvector Centrality**
Physical Review E (under review)

2018 **Machine Learning based Energy Management System for grid disaster mitigation**
IET Smart Grid

2018 **A Battery Pack Reconfiguration Scheme for Improved Charge Balancing**
American Controls Conference

2015 **A magnetically enhanced wireless power transfer system for compensation of misalignment in mobile charging platforms**
IEEE Energy Conversion Congress & Exhibition

Technical Skills

Applications	Network Science, Complexity, Optimization, Data Science, Probability and Statistics, Machine Learning, Systems Modeling
Programming	Python, Julia, C, C++, Node.js, MATLAB
Computing	Linux, Ansible, Docker, Elastic Stack, Kafka