

Mark Ditsworth

WORK EXPERIENCE

APR 2019 – PRESENT

Capital One

Data Engineer

- Supported a petabyte-scale data lake for cyber-security and network telemetry data.
- 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.

PROJECTS & ACTIVITY

2020 **TweetAnalyzer**

A containerized environment for ingesting and enriching Twitter data for fast searching and analysis.

2019 **Swamp**

An OSINT Utility that discovers associated sites via Google Tracking IDs. Contributed the lifting of tracking IDs from web pages, URL verification, and pivoting to a graph-based data structure.

2019 **Data Science Tool Kit**

A python module for personal use to perform common data analysis functions. (In progress)

2019 **PyGA**

Python package for genetic algorithm optimization.

2019 **Vaccination Strategy Optimization**

Modeled the spread of an infection with Monte Carlo simulations to optimize a vaccination campaign.

2018 **Reddit Bot Account Detection**

Method for identifying Reddit bots based on content agnostic features.



Dallas, TX



markditsworth@protonmail.com



www.linkedin.com/in/markditsworth



www.twitter.com/markditsworth



www.github.com/markditsworth

FORMAL EDUCATION

2017 – 2019

M.S. Systems Engineering

UNIVERSITY OF TEXAS - DALLAS

2017 – 2018

Machine Learning Nanodegree

UDACITY

2013 – 2017

B.S. Electrical Engineering

UNIVERSITY OF TEXAS - DALLAS

SELF-PACED COURSEWORK

Probabilistic Systems Analysis

Mathematics of Data Science

Linear Partial Differential Equations

PUBLICATIONS

2019

Community Detection With Katz and Eigenvector Centrality

Complex Networks 2019 - Lisbon

2018

Machine Learning based Energy Management System for grid disaster mitigation

IET Smart Grid

2018

A Battery Pack Reconfiguration Scheme for Improved Charge Balancing

ACC 2018 - Milwaukee

2015

A magnetically enhanced wireless power transfer system for compensation of misalignment in mobile charging platforms

ECCE - Montreal

TECHNICAL SKILLS

APPLICATIONS

Network Science, Optimization, Probability and Statistics, Machine Learning, Systems Modeling

PROGRAMMING

Python, Bash, Julia, SQL

COMPUTING

Linux, Docker, Elasticsearch, Logstash, Kibana, Kafka, Jenkins, Snowflake