

# 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  $\pm 5$  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 SkillsInfo

An environment for scraping LinkedIn pages for labor market information, and indexing it to Elasticsearch for viewing and searching.

### 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, lifted from web pages.

### 2019 Data Science Tool Kit

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

### 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