Mark Ditsworth

WORK EXPERIENCE

APR 2019 – PRESENT

Capital One
Data Engineer

– Supported a petabyte-scale data lake for cybersecurity and network telemetry data.
– Architected and implemented an automated rehydration service for a fleet of Elasticsearch 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.
– Created 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.

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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