

Dwight Luther Temple

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PROFESSIONAL EXPERIENCE SUMMARY

- Perform in close proximity with business partners while innovating, implementing, and deploying novel techniques for real-time fraud prevention at a global scale
- Over six years of relevant experience creating, developing, and launching real-time deep-learning and physics-based algorithms for missile defense and space situational awareness applications.
- Intimately familiar with transformers, RNNs, GANs, object segmentation, tracking, state-space-systems, and XGBoost.
- Principle investigator and key performer for business proposal efforts for the Air Force, Missile Defense Agency, and Army
- Fervently pursues new skills and adapts to unique areas; has resulted in several published papers and new customers

EDUCATION

University of Alabama in Huntsville

2018

- Master of Science in Management Science, Business Analytics, 3.9

Mississippi State University

2016

- Bachelor of Science, Aerospace Engineering, 4.0, Activities: marching band, resident adviser

WORK HISTORY

Apple, Senior Machine Learning Engineer

5/2020 – Present

- Maintained, developed, and innovated analytic fraud model using Python, XGBoost, SQL, Pandas, Numpy, Seaborn, and clojure pipeline that prevents over \$35M in annual fraud losses
- Improved model development cycle through automation and standardization of configurations, feature specifications, and operational safety measures. This shortened a model refresh cycle from two-weeks to less than two-days and improved responsiveness to accelerating trends.
- Led team-wide innovation efforts for graph neural network approaches and feature engineering
- Monitored and tuned model deployments in real-time using PySpark to ensure smooth transitions. This reduced SLA from ~4 hours for error detection to 5 minutes and prevented ongoing deployment errors.
- Crafted novel approaches for multi-modal fraud detection; implemented image-segmentation model for use in manufacturing
- Worked in cross-functional teams to incorporate and convey new business findings, recommend courses of action, and leverage disparate data sources for modeling purposes

ExoAnalytic Solutions, Artificial Intelligence Engineer

5/2016 – 5/2020

- Initiated and developed full-stack deep-learning and multi-target tracking approaches for SSA detection, characterization, indications, and warnings using a dataset with over 500,000 new daily observations. This suite encompassed data curation, processing, and decision-making for enhancing anomalous event detection from an operational network of over 350 telescopes.
- Formulated and delivered hybrid recurrent neural network and physics-based tracking algorithm in Python and Tensorflow for highly maneuvering aerospace vehicles. The customer frequently commented on the ease of integration relative to others' algorithms despite being the most novel and unique tool they used.
- Engineered a probabilistic DNN operating on real-time multi-sensor, multi-target, multi-variate, asynchronous radar data. Orchestrated Python and Tensorflow to MATLAB port using Java interface. This effort highlights the flexibility and applicability of cutting-edge technologies to disparate operational environments.
- Leveraged multi-hypothesis tracking and probabilistic data association methods in cluttered and multi-sensor environments for implementation into simulations for data-generation and model development pipelines.
- Led proposal team efforts and provided expertise developing new business-areas through tactful implementation of artificial intelligence fused with industry standards to best fit customer needs.

PUBLICATIONS

Temple, D. Real-Time Plume Detection and Segmentation Using Neural Networks. J Astronaut Sci 67, 1793–1810 (2020). <https://doi.org/10.1007/s40295-020-00237-w>

Temple, D. "Synthetic Heterogeneous Anomaly and Maneuver – Neural Network Event Winnowing." Annual Advanced Maui Optical and Space Surveillance Technologies, 2018

Temple, D. Poole, M. "Network Enabled – Unresolved Residual Analysis/Learning." Annual Advanced Maui Optical and Space Surveillance Technologies, 2017

GOALS

- Tenaciously pursue the means necessary to impact an operational system, product, or service
- Holistically chase excellence in all areas of life: work, relationships, hobbies, and community