Dwight Luther Temple

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Professional Experience Summary

- Perform in closely with business partners innovating, implementing, and deploying real-time fraud prevention globally
- Applied research with transformers, GNNs, RNNs, GANs, LLMs, tracking, state-space-systems, XGBoost, Catboost, and PyTorch
- Principle investigator and key performer for business proposal efforts for the Air Force, Missile Defense Agency, and Army
- Committed to continuous learning and professional growth, demonstrated by published papers and customer acquisition
- Deep understanding of DNNs, their optimization; low-level tracker integration and tuning

Work History

Apple, Senior Machine Learning Engineer **4/2022 – Present**

- Revitalized and improved deprecated fraud program through process improvements, introduction of split testing for manual reviews, and consolidating existing models to maximize our adversarial fraud signal. Resulted in a 50% improvement in annualized year-over-year capture.
- Led team-wide innovation efforts for graph neural network approaches and feature engineering
- Supported onboarding for ICTs and led internship focused on label-decomposition for fraud attribution and novel ensembles

Apple, Machine Learning Engineer **5/2020 – 4/2022**

- Maintained, developed, and innovated analytic fraud model using Python, XGBoost, Snowflake, Pandas, Numpy, Seaborn, and Clojure pipeline that prevents over $35M in annual fraud losses
- Shortened model development cycle from two-weeks to two-days through automation and standardization of configurations, feature specifications, and operational safety measures; improved responsiveness to accelerating trends.
- 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 using Keras, YOLO, and Catboost
- 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 Missile Defense 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.

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

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