TUCKER R. STEWART
Applied Scientist | Machine Learning Researcher
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EDUCATION

Doctor of Philosophy in Computer Science and Systems – Anticipated 2026
University of Washington Tacoma, GPA: 4.0
Master of Science in Computer Science and Systems (Data Science) – 2022
University of Washington Tacoma, GPA: 4.0
Bachelor of Science in Computer Science and Systems with Honors, Minor in Mathematics – 2020
University of Washington Tacoma, GPA: 3.99 (Summa Cum Laude)

SKILLS

Programming Languages: (Proficient) Python, Java, SQL, C, HTML, CSS, (Exposed) Bash, R, C++, C#, JavaScript
Frameworks and Tools: (Proficient) PyTorch/Lightning, TensorFlow, Hugging Face Transformers, Optuna, MLflow, PySpark, Anaconda, Jupyter, Maven, Eclipse, PyCharm, (Exposed) Microsoft Azure, Google Cloud Platform, Kubernetes, Ray, Poetry, Android Studio, Unity

EXPERIENCE

CueZen: Machine Learning Consultant (Contract) January 2023 – August 2025
- Researched and prototyped sequential pattern mining, process mining, and generative modeling methods to mine human behavioral pathways, designed to generate insights for customers.
- Implemented and evaluated state-of-the-art synthetic data generation methods, including RNN-based GANs for simulating human behavioral data.
- Built an end-to-end ML pipeline for modeling user behavioral propensity to support personalized health recommendation systems, including a transformer-based model, hyperparameter tuning (Optuna), experiment tracking (MLflow), and RESTful deployment (FastAPI).

Advata (formerly KenSci): Research Assistant February 2021 – October 2022
- Designed and evaluated deep learning models for health-related outcomes, utilizing representation learning on open-source healthcare datasets.
- Developed end-to-end ML pipelines in Azure ML, featuring experiment tracking (MLflow), automated report generation, and reproducible workflows.
- Conducted a comprehensive survey of deep sequential models for healthcare outcomes.

ServiceNow: Software Engineering Intern June 2019 - September 2019; June 2020 - September 2020
- Developed new features for the Configuration Management Database's (CMDB) Identification and Reconciliation Engine (IRE) in Java, SQL, and JavaScript.
- Created an automated and easily maintainable test suite for testing new integrations for the CMDB's 'Extract, Transform, and Load' (ETL) system.
- Collaborated in a corporate environment, contributed to design discussions, and used Git for version control of the code base.

PROJECTS

Prediction of Rare Events in Sequential Modeling: Sepsis Onset
- Collaborated with the University of Washington Medicine to predict sepsis onset in traumatically ill ICU patients using multimodal Electronic Health Record (EHR) data.
- Proposed and implemented novel representation learning techniques to enhance deep learning models in predicting rare events, improving model generalization and sensitivity.
- Developed an extensible framework for executing ML experiments that parses parameters, partially automates experiment tracking with MLflow, and ensures reproducibility.

Peak Volume Prediction in Network Traffic Forecasting
- Collaborated with Infoblox to forecast peak network traffic values, enhancing predictive accuracy for critical usage periods.
- Researched and applied time-series decomposition techniques to improve peak-value forecasting.

PUBLICATIONS

T. Stewart, K. Stern, G. O'Keefe, A. Teredesai, and J. Hu, "NPRL: Nightly Profile Representation Learning for Early Sepsis Onset Prediction in ICU Trauma Patients," in *2023 IEEE International Conference on Big Data (BigData)*, 2023, pp. 1843–1852.

T. Stewart, B. Yu, A. Nascimento, and J. Hu, "Enhancing peak network traffic prediction via time-series decomposition," *arXiv preprint arXiv:2303.13529*, 2023.

HONORS AND AWARDS

- Carwein-Andrews Distinguished Fellow (Spring 2024; Winter 2025-Spring 2025)
- Mary Gates Research Scholar (2019-2020)