

# Sean Sayce

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## EDUCATION

**Texas A&M University – College of Engineering** GPA: 3.6

*Bachelor of Science, Computer Engineering* From: August 2020 – August 2024

*Masters of Computer Science* From: January 2025 - December 2025

### **Courses of Relevance**

Machine Learning, Artificial Intelligence, Deep Learning, Parallel Computing, Software Engineering, Data Mining and Analysis, Intelligent User Interfaces, Network Security, Analysis of Algorithms

## EXPERIENCE

**Technical Intern – KX Systems** | Manhattan, NY | Summer 2023

- Managed **two high-impact automation projects**, improving speed and reliability of internal systems.
- Developed **automated testing frameworks** with **Nightwatch**, reducing manual UATs on KX Dashboards by **30%**.
- Engineered a **high-performance demo** for the **Q language**, showcasing real-time processing with significant speed improvements.
- Leveraged **KDB Insights** to build a **real-time data visualization dashboard**, improving monitoring and analytics.
- Integrated **AWS storage pipelines** with Q for **daily ingestion and real-time querying**, optimizing end-to-end **data workflows**.

## PROJECTS

**BuffAggie – Intelligent Workout Recommendation System**

- Developed a **Streamlit web application** that generates personalized workout recommendations using **Sentence Transformers** for natural language understanding.
- Built a **LangChain/LangGraph pipeline** to manage conversational recommendation flow, enabling adaptive fitness guidance.
- Implemented an **SQLite database** for storing and retrieving user preferences, improving query response time 40%.
- Applied **NLP and machine learning techniques** to analyze exercise semantics and recommend context-aware fitness routines.
- Delivered a **full-stack solution** combining backend ML inference with an interactive frontend, achieving a 95% pilot user satisfaction rate.

**Sentiment Analysis - LSTM and Transformer Models**

- Implemented **PyTorch learning models (LSTM, Transformer)** for **sentiment classification** on **IMDB dataset**.
- Designed a **data preprocessing pipeline** with **text cleaning, tokenization, vocabulary building, and masking**.
- Achieved **87%+ validation accuracy** within 15 epochs using **optimized training loops**.
- Reduced training time per epoch by **30%** through **checkpointing and efficient batching**.
- Benchmarked architectures, finding the **Transformer outperformed LSTM by 5%** in accuracy on average.

**Maroon Health - Website Development**

- Developed a **React Native website** for Texas A&M's Maroon Health using a **3-month Agile sprint cycle** with weekly Scrum meetings.
- Implemented **CRUD functionality** with **Ruby on Rails, HTML, and CSS**, enhancing usability and site scalability.
- Consolidated member tools into a unified platform, cutting **operation time by 25%**.
- Streamlined **event scheduling and inventory tracking**, boosting leadership efficiency and achieving **100% positive satisfaction reports**.

## SKILLS

**Programming:** Python, C++, Java, C, SQL

**Machine Learning / Data Science:** PyTorch, Scikit-learn, XGBoost, Pandas, NumPy, Matplotlib, NLP, Deep Learning Models (LSTM, Transformer)

**Web & Mobile Development:** React Native, Ruby on Rails, HTML, CSS, JavaScript, API Integration (Spotify, AWS, LangChain/LangGraph, OAuth)

**Cloud & Tools:** AWS (S3, data pipelines), Git/GitHub, Docker, Agile/Scrum

**Databases:** SQLite, KDB+

**Parallel Computing:** OpenMP, MPI, CUDA (GPU acceleration)