SCOTT PITCHER

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EDUCATION

University of South Florida | *Tampa, FL* *August 2020 – June 2024*

Bachelors of Science in Computational Mathematics*: Data Analytics and Business Intelligence Concentration*

- Cumulative GPA: 3.86/4.00 *(Magna Cum Laude)*; USF Green & Gold Scholarship *(~$15,000/year)*
- Relevant Coursework: Advanced Probability, Data Analysis, Machine Learning Development/Deployment, Statistics

PROFESSIONAL EXPERIENCE

Research Machine Learning Scientist – *Moffitt Cancer Center* | *Tampa, FL* *September 2022 – June 2024*

- Researched and developed state-of-the-art supervised deep learning models in **PyTorch** for odds and mortality prediction, achieving a mean accuracy of 94%.
- Engineered data pipelines **(scikit-learn, Spark)** to optimize retrieval, cleaning of 25GB of data, reducing **API** access time by 36%.
- Led the implementation of advanced statistical techniques, including **Bayesian Inference** and **Propensity Score Matching**, **enhancing** model performance by **12% in R-squared** to improve data quality and manage confounding variables.
- Increased model efficiency by 31% through **Causal inference** to identify and refine key variables and both **reinforcement and active learning** to improve model training and accuracy.
- Created **natural language processing (RegEx, NLTK, SpaCy)** pipelines to parse patient data, segmenting by user history.

PROJECTS

PokémonPlatinum.AI – *(GitHub)* *August 2024*

- Developed an AI gameplay model using **reinforcement learning with human feedback (RLHF)** and **modular programming**, increasing task-completion rate by 21% and reducing development iteration time by 30%.
- Optimized model architecture and GPU utilization, **reducing computational usage** by 22% while maintaining model accuracy.
- Enhanced decision-making accuracy by 29% with **LSTM**-based memory integration in **PyTorch**, enabling the AI to retain game states and actions effectively.
- Reduced manual annotation time by 74% through automated labeling of gameplay frames using a fine-tuned **computer vision** system **(OpenCV, YOLOv9)**.

Spotify User Analysis And Recommender System – *(GitHub)* *July 2024*

- Implemented **reinforcement** and **active learning techniques**, elevating predictive accuracy by 20% through user-interaction adaptation, addressing diverse user behavior patterns.
- **Reduced customer churn** by 44% with a scalable playlist recommender in **PyTorch** using **GCNConv** layers, enhancing user retention across varied demographics.

Tampa.AI - *(GitHub)* *June 2024*

- Prompt engineered a pre-trained LLM **(hugging face, transformers)** to review and extract text article data to enhance the natural language processing for preparing training data for fine-tuning.
- **Fine-tuned** OpenAI's GPT-3.5-Turbo **LLM** with regional data to create a specialized **chatbot** for Tampa Bay information, enhancing local user engagement.

SKILLS & LANGUAGES

Technical Skills: Data Pipelines (mining, cleaning, visualizing, modeling, deployment), A/B Testing, Bayesian/Causal Inference, Big Data (Spark, Hadoop), Deep Learning, Cloud Computing (Vertex AI, BigQuery, AWS, GCP), Computer Vision, Kubeflow

Languages & Tools: Python (scikit-learn, numpy, pandas, pytorch, matplotlib), R, Looker, SQL, MySQL, PowerBI, Tableau, Lua