Kevin Cushing

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EDUCATION

Northwestern University, The Graduate School, Evanston, IL March 2025
Master of Science in Computer Science
GPA: 4.0
Thesis: *A Design and Implementation of a System for Fact Checking.* Advisor: Kristian J. Hammond

Cornell University, College of Engineering, Ithaca, NY May 2022
Bachelor of Science in Computer Science
Magna Cum Laude, with honors in Computer Science
Minor: Mathematics
GPA: 3.86

RESEARCH EXPERIENCE

Graduate Researcher January 2024-Present
Professor Kristian Hammond, Northwestern University, Evanston, IL
- Fine-tuned and experimented with language models on text-to-SQL tasks to improve the automation of data analysis and report generation for the Satyrn project in the C3 Lab
- Developed a system to generate text-to-SQL datasets from databases of various domains (paper coming soon)

Undergraduate Researcher September 2021-May 2022
Professor Madeleine Udell, Cornell University, Ithaca, NY
- Investigated the effects of covariate shift on the performance of machine learning models with a small team
- Designed a general framework for comparing active learning strategies on benchmark datasets

WORK EXPERIENCE

Data Engineer September 2022-September 2023
Somatus, McLean, VA
- Pioneered development of CI/CD pipelines using Azure Devops to accelerate the deployment of software updates in an agile environment
- Piloted an ML Ops process leveraging Kubernetes and Kubeflow to streamline model training and inference jobs
- Integrated data streams from new vendors to drive more timely treatment of patients
- Migrated Python scripts to automate daily and monthly jobs using Azure Function Apps and VMs

Applications Development Intern June-August 2021
MarketAxess, New York, NY
- Created an API for testing price calculations of fixed income instruments using Java and SpringBoot
- Collaborated in an agile environment to implement and improve price calculations for fixed income instruments

Founding Partner August 2020-January 2021
Culibra Tech Solutions, Phoenixville, PA
- Led a small team to consult and develop software
- Created an online classroom environment to allow students and teachers to play math games together during COVID

ACADEMIC PROJECTS

A Design and Implementation of a System for Fact Checking (M.S. Thesis) January-December 2024
- Developed a system to fact check text against internet sources using multiple machine learning models and provide an annotated report with relevant supporting or refuting sources for each claim made in the original text
- Experimented with different models and approaches to improve the system in an iterative manner

Minerva (Course Project) April-May 2024
- Created a chat bot to recommend classes using retrieval augmented generation with information on Northwestern course offerings
- Designed a simple representation of users including their interests and domains of expertise for improved dialogue

Backgammon Bot (Practicum Project) September-December 2021
- Trained a deep learning model to play backgammon using temporal difference learning similar to TD-Gammon
- Implemented a backgammon game to allow for model self-play and for users to play each other or against our model

TECH STACK

Azure, AWS, Python, PyTorch, TensorFlow, LangChain, ChromaDB, SQL, Docker, Kubernetes, Kubeflow, Spark, Databricks, Java, C++, C, OCaml, JavaScript, Angular.js, Node.js, Express.js, Socket.io, MongoDB, CSS, Sass, Linux, Lisp, MATLAB