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PURPOSE

To apply principles in Computer Science & Engineering

- To apply and learn advanced techniques gained from Machine Learning/AI classes, Data Structures, and Algorithms gained from coursework towards Research and Projects
- To apply knowledge of Distributed Systems to use in future projects and work, and to later design and architect systems supporting such fields

EDUCATION

The Ohio State University Main Campus, Columbus, OH
Completed B.S. Computer Science and Engineering Program
Cumulative GPA (4.00 Scale Up to Last Semester): 3.55
Academic Awards: Dean's List for August 2021, Summer 2022, Summer 2023, and Spring 2024

SKILLS

- Languages – Java, C++, Python, C, Ruby, x86 Assembly, MATLAB, JavaScript, SQL
- Technologies – HTML, CSS, Ruby On Rails(Devise, JQuery, Shrine, Bootstrap), PyTorch
- Tools – GitHub, Git, Docker, Elastic-Search, GCP, OSC Supercomputer Experience, CUDA, POSIX, OpenMP, MPI

EXPERIENCE

Research Implementation (CSE 5523) – Dynamic Multi-Label Classification Implementation

- **Content**: Worked with a partner to understand, implement, augment, and test the algorithms mentioned in the **paper** (DOI: 10.1109/TKDE.2018.2810872), determining when new labels should be added to an ongoing classification to better represent a change in learning environment, like if movies from the 1980's to 2000's shifted to horror and adventure rather than comedy and romance.

Project Capstone (CSE 5914) – Movie Recommendation Engine

- Content: User based queries (filters & direct search) combined with previous results, likes, and dislikes generate a list of relevant movies that are sortable by a button. Its standout feature is its generosity to bad search queries, such as "Openhiemer ." returning "Oppenheimer", along with similar movies. The main engine runs on ElasticSearch to analyze and parse datasets of phrases, pages, images, and more.

Autoregressive Image Generator (CSE 5524) – Generative AI project (PixelCNN implementation)

- Content: given training and testing data (CIFAR-10 and MNIST), I trained a neural network to predict the conditional dependencies of a next pixel being of a certain color/intensity based off of the sequence of prior pixels. Training allows weights to form to model out Prob(pixel I given pixel 1 to I - 1) to predict Pixel(I).

Student Grader (CSE 3231)

- I analyzed and assessed various projects and assignments relating to SDLC and Project proposals, reinforcing my understanding of Software Engineering design principles

Hackathon Project (HACKOHI/O 2023) – Tracking indoor traffic patterns

- Used Wireshark to find IP addresses on a network
- Designed method to analyze IP address data to determine travel patterns in a building

COURSEWORK & SKILLS APPLICATIONS

- AI: Intro Artificial Intelligence (CSE 3521), Machine Learning (CSE 5523), Computer Vision (CSE 5524)
- SDLC: Software Requirements Analysis (CSE 3232), Project Web Apps (CSE 3901), Software Engineering Techniques (CSE 3231)
- Database Management: Data Mining (CSE 5243), Advanced DBMS (CSE 5242)
- Programming Competency: Principles of Programming (CSE 3341)
- Cloud & Network Management: Data Management in Cloud (CSE 3244), Computer Networking (CSE 3461)
- Computation Theory: Data Structures & Algorithms, Automata Formal Languages (CSE 3321)
- Computer Architecture: Systems 2: Operating Systems (CSE 2431), Intro to Parallelism (CSE 5441)
- Mathematics: Intro Statistics ENG (MATH 3470.02), Linear Algebra, Proofs & Foundations of Higher Math (MATH 3345), Engineering Math A (MATH 1172)
- Circuit Analysis: Intro to Digital Logic & Analog Systems and Circuits (ECE 2060, ECE 2020)

ORGANIZATION

- AI Club