Ari Hu

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EDUCATION	B.S. in Computer Science, The University of Texas at Dallas, Aug 2021 - May 2024 G.P.A. 4.0/4.0 Summa Cum Laude
COURSES	Computer Science I and II, Physics I and II, Discrete Math I and II, Linear Algebra, Computer Architecture, Probability and Statistics, Data Structures/Algorithms, Systems Programming in UNIX, Professional/Tech Comm., Software Engineering, Programming Lang. Paradigms, Digital Logic, Database Systems, Operating Systems Concepts, Advanced Algorithms, Automata Theory, Computer Networks, Video Games, Artificial Intelligence, Machine Learning, CS Project

TECHNICAL SKILLS

Programming Languages:	C/C++	Java	Python
	SQL	Prolog/Lisp	HTML/CSS/JS
Database Technologies:	MySQL	MSAccess	ChromaDB
Operating Systems:	Windows 10	Linux/Unix	OSX/iOSX
Software Applications:	MSOffice	Google Drive	MSTeams/Zoom/Webex
Certifications:	Microsoft Word/Excel/PowerPoint/Access Certified, 2019		

PROFESSIONAL EXPERIENCE

Smart Data Solutions
Healthcare Correspondence LLM
(Senior Design Project)-
ChromaDB,Python, CUDA,Git,LLama2, JSON,HTML/CSS/JS
January-May 2024

Build a proof of concept for a "chatbot" system with a group of six that allows customers to ask questions and receive answers from correspondence data history using open LLM architecture, and create a proposed list of other data integrations that could add value in the future.
• Took Tesseract OCR JSON data and converted it to text to feed it into the database ChromaDB.
• Setup the LLama.cpp LLM with Pytorch and added CUDA support in Amazon Workspace.
• Linked the Database and the LLM for similarity search to find relevant documents for context..
• Setup a flask backend API to run the model given question, and send answer to the frontend.
• Made a status report and presented the project at SDS Dallas Grand Opening and UTD Expo.

ACADEMIC PROJECTS

Systems Programming:
C, BASH, GDB

Build 3 C projects: A client and server using sockets that stores info, a multithreaded Merkle hash tree to encrypt a file, and a custom shell that includes pipelining and built-in commands.

JOS Operating System:
C, x86, GDB, QEMU, Git

Build a JOS operating system. Learned how a Intel x86 i386 chip boots, implemented memory management, environments, exception handling, multitasking, file systems, spawn, and shell.

Glass Database:
Visio, Drive, MySQL

Constructed a grocery store database "Glass" with a group. Created a proposal, an ER and Schema Diagram/Dictionary, Implementation Log, Table Listing, and Data/Query examples.

Soundrise:
MS Office, Astah UML

Created a group SRS requirement/analysis document about a music streaming service called "Soundrise" that included Use Cases/UML, component/analysis/sequence diagram.

Twenty Card Solver:
Lisp(Racket), Prolog(SWI)

Programmed a Lisp function and a Prolog clause that finds the longest play with least wildcards or largest point value in a card game "Twenty."

Pacman AI:
Python

Implemented DFS, BFS, and A* Search algorithm for Pacman, minimax and alpha beta pruning to maximize score, and inference, bayes networks to predict ghost location.

Dog Knight:
Unity, C#, Google Doc

Acted as team leader for the game Dog Knight. As leader, I came up with a collaboration/version merge plan, and built a timeline. I also added Audio/Visual Effects, combat, and game world.

Yelp! Sentiment Analysis:
Python, Pytorch, Latex,Git

Implemented a Feed Forward and Recurrent neural network for Sentiment Analysis that predicts a Yelp review's rating. Constructed report detailing variations of networks, performance, and error.

Insect Pest Recognition using CNN models
Python, Pytorch, Latex

Implemented ResNet18, MobileNet, and GoogleNet to classify insect pests from the IP102 dataset with a group. Created a report detailing experiment and results, and presented a presentation on our implementation and findings.

PERSONAL PROJECTS

QuickPlay:
HTML/CSS/JS

A Chrome Extension that allows you to change the speed of the video player. Includes shortcuts to increment/decrement/reset speed. Learned about Manifest V3 and Chrome Storage.

IMDb Runtime Scraper:
Python, HTML/CSS/JS

Created a webpage using Flask that will input an IMDb TV ID and return the total runtime using BeautifulSoap for episode page list and Selenium scrapers for the dynamically loaded pages.

Image API
Java,Spring, MySQL,YAML

A Rest API backend using Spring Boot and Spring Security that allows authenticated users to get, post, delete, and update images. Learned about Rest APIs and how it connects to the frontend..

ITube
TS, Docker, Node,Express NextJS,React,TailwindCSS, Google Cloud, Firebase

Created a Youtube Clone that allowed users to view videos and upload videos once authenticated using Firebase Auth. Learned how to store data in Firebase, and incorporate Express Rest API to process the videos. Created a frontend with React and TailwindCSS, and learned how to deploy applications to docker and Google Cloud.

AVAILABILITY: Immediate for Full Time/Internship