DIJKSTRA LIU

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EDUCATION

Washington University in St. Louis August 2022 to present
Bachelor of Science in Computer Science **GPA 4.0/4.0**
Capital Normal University High School September 2019 to May 2022
Graduated with High Honors

TECHNICAL SKILLS

- Strong foundation in data structures, algorithms, and software engineering.
- Proficient in machine learning techniques and libraries such as TensorFlow or PyTorch, with experience in developing and deploying models for classification, regression, or clustering tasks. Capable of using models like CNN, RNN, and Transformer to solve realistic problems. Be able to use loRA, adapter, and prompt tuning to fine-tune open-source LLMs and CV models. Familiar with LangChain to build applications based on GPT's API.
- Proficient in C/C++/Java programming language, demonstrating a deep understanding of algorithms and data structures. Be able to use algorithms of parallel programming.
- Familiarity with programming tools and technologies like Git, Visual Studio, and Linux.
- Proficient in web development technologies such as HTML, CSS, JavaScript, and frameworks like React or Express, with experience developing front-end and back-end applications using tools such as Node.js and database MySQL/MongoDB.

WORKING EXPERIENCE:

1. **Internship in DHC Software Co.,Ltd, Financial Big Data Technology Department: Software Developer (May 2023 – July 2023)**

Work experience:

During my time at the company, I developed an AI credit reporting system using ChatGLM-6B. I trained the model with LoRA and P-tuning to meet the specific requirements of credit assessment and anti-money laundering. I enhanced its mathematical computation capabilities in finance using LangChain's Agent feature. Additionally, I implemented prompt templates to ensure stable and storable data output. My work resulted in an efficient and accurate AI credit reporting system, providing strong support for the company's operations in the financial sector.

2. **Computer Science Elite Program(Sep 2021 to May 2022)**

Work experience:

As a high school student, I partake in computer music research at Beijing Institute of Technology. My role involved utilizing Transformer models from the field of Natural Language Processing (NLP) for MIDI music generation. Concurrently, I employed the MobileNet V2 model from the field of Computer Vision (CV) to classify music based on waveform images. These experiences allowed me to acquire a comprehensive understanding of various machine learning modules and to familiarize myself with research procedures.

3. Computer science educator (2019 - present)

Work experience:

I initiated a computer support teaching project at Guilin Experimental Middle School Affiliated with Capital Normal University, where I taught over 100 students and gave over 200+ lectures. I am committed to teaching computer programming, algorithms, and data structures, inspiring students' interest, and helping them achieve excellent results in related competitions. Later, I taught information competition classes to help students learn competition algorithms and prepare for major international information technology competitions.

4. University Entrepreneurial Team: Cuisine Hub (February 2023 - Present)

Work experience:

Developed recipe analysis software based on artificial intelligence, which provides users with recipes that suit their tastes. The platform allows users to interact, share recipes, comment, and collect. I was mainly responsible for designing the back-end database structure, participating in product design planning, determining requirements and functions, and writing front-end pages using HTML.

PERSONAL PROJECT EXPERIENCE:

1. Project name: Gomoku Battle Program and AI (July 2021 - September 2021)

Project description:

This is a Gomoku battle program developed using C++. Users can choose to play against each other or the AI in the program. The AI optimizes the Expectimax algorithm to improve calculation efficiency and space occupation. The program implements a simple and easy-to-use interface, making it easy for users to play Gomoku using the program.

Personal responsibilities:

- Implement the basic logic and interface of the Gomoku game.
- Use C++ to write AI algorithms and optimize them using the Expectimax algorithm.
- Debug and test the program to ensure its stability and functionality.

2. Project name: Emotion-Based Music Classification with MobileNet (May 2021 - July 2021)

Project description:

Develop a music classification system using MobileNet and Pytorch. The system will classify music based on emotion and music type. It will extract features from audio files and utilize a pre-trained MobileNet model for accurate predictions. Evaluate and test the system to ensure reliability and performance.

Personal responsibilities:

- Implement the music classification system using Pytorch and numpy.
- Extract relevant features from audio files for classification using Python
- Evaluate and test the system to ensure reliability and performance.
- Communicate with Organization to acquire labeled data.

3. Project name: Team Expense Manager (June 2022 - August 2022)

Project description:

Developed a team expense manager web application using React for the front end and Node.js Express for the back end. The application supports money transfers between team members, automatic splitting of expenses such as food and transportation, and team bill management. The user interface is intuitive and easy to use, allowing for efficient tracking and management of team expenses.

Personal responsibilities:

- Developed the front end using React, ensuring a responsive and user-friendly design.
- Implemented the backend using Node.js Express, including expense management and database connectivity APIs.
- Designed and implemented the MongoDB database schema to efficiently store and retrieve expense data.
- Collaborated with team members to ensure project requirements were met and delivered on time.

HONORS AND AWARDS

- Distinction Rank (Top 5%) in 2021 AMC 12A 2021
- 1st Place in Gold Division (out of 723 participants) of the USACO Contest 2020
- Top 2% of 148,880 students, National Olympiad in Informatics in Province (NOIP) 2019