Athena Deng

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EDUCATION

Brown University   *Providence, RI*
Sc.B. Computer Science, B.A. in Cognitive Neuroscience. GPA: 4.00/4.00   *Expected Graduation May 2027*
Relevant Courses: Operating Systems, Deep Learning, Data Structures and Algorithms, Object-Oriented Programming, Foundations of AI, Computer Systems, Linear Algebra, Statistical Inference I & II, Interaction Design

Hinsdale Central High School   *Hinsdale, IL*
Graduated Summa Cum Laude (top 2%) in class of 671 students; GPA: 5.98/4.00; ACT: 36   *June 2023*

PROJECTS

Internal RAG Search Engine | *Python, LangChain, OpenAI API, Qdrant, Unstructured*
- Developed full-stack Python Shiny web app using a retrieval-augmented generation (RAG) pipeline to upload documents to a document database and retrieve relevant results based on a user query, then summarize and display each document's relevant sections, including options to filter content by date, language, and file type.
- Created RAG pipeline with LangChain, using Unstructured to parse and preprocess documents of various file types, OpenAI for embeddings, and Qdrant as the vector database.

Custom Unix Shell | *C*
- Created fully functional Unix shell with built-in commands (cd, rm, ln, exit) and syscalls (read, fork, execv, wait).
- Implemented foreground and background process execution, child process management, and signal handling (e.g. reaping child processes, managing job list), with extensive error-checking.
- Parsed and handled command-line user input using low-level read system call (no scanf), including validation of incorrect inputs and file redirection capabilities.

AI Go Agent | *Python, PyTorch*
- Built AI agent to play Go (Weiqi) using Iterative Deepening Search (IDS) as the core algorithm, augmented with a supervised learning-based value function model for heuristic evaluation.
- Designed state representation and trained value model to improve decision-making and optimize search performance.
- Created and integrated an opening book to accelerate early-game computations and enhance gameplay efficiency.

WORK EXPERIENCE

Easy Healthcare Corporation   *Chicago, IL*
ML Intern, June 2024 - August 2024
- Develop L2 trend filter algorithm with Python and NumPy to predict each user's ovulation windows using their own inputted health data, reaching over 1 million users.
- Implement functionality for unevenly spaced data, k-fold cross-validation, and the 1 standard error rule for model selection.

University of Illinois at Chicago Future Learning and Memory Lab   *Chicago, IL*
Research Assistant, June 2024 - August 2024
- Designed and executed online behavioral study examining the impact of individual differences in past experiences on engagement in episodic future thinking related to college. Leveraged Pavlovia for data collection and analysis, utilizing Python and JavaScript for custom stimulus design and experimental scripting.
- Implemented effective recruitment strategies and activities to enroll over 200 participants in lab's recruitment database.

ACTIVITIES & AWARDS

Executive Board Member, Food Recovery Network   *Providence, RI*
Brown University, December 2023 - Present
- Coordinate distribution of 18,000+ pounds per year of otherwise wasted food from Brown University to 5 RI food shelters.
- Organize 7+ events per year for members, including community panels, fundraisers, collaborations, and socials.
- Collaborated with board member to build and deploy chapter website using React.js.

Chinese Student Association, Brown University   *Providence, RI*
Family & Social Chair, September 2023 - Present
- Organize 10+ cultural events per year each serving 100 to 400+ people, coordinate partner events with other cultural clubs.
- Restructured family program, growing participation by over 50%: from 22 to 36 families serving 200+ students.

SKILLS & INTERESTS

Languages & Libraries: Python, C, Java, HTML/CSS, Javascript, NumPy, Pandas, Matplotlib, PyTorch, Langchain, Scikit-Learn
Frameworks & Developer Tools: Docker, React.js, JUnit, VSCode, IntelliJ, Git, Figma
Organizations: Rewriting the Code, Women in Computer Science, Girls Who Code
Interests: Violin, sustainability, yoga, reading, philosophy, gardening, baking, drawing