Yuhua Weng

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I'm actively seeking for Summer 2024 SDE/DS internships! I'm available to work from May 15, 2024 to August 23, 2024.

Education

University of Illinois at Urbana-Champaign Champaign, IL
Grainger College of Engineering - Master of Computer Science *August 2024 - May 2025 (Expected)*
- This is part of the five-year BS/MCS program

University of Illinois at Urbana-Champaign Champaign, IL
Grainger College of Engineering - B.S. in Computer Science *August 2020 - May 2024 (Expected)*
- GPA: 3.98/4.0
- Dean's List: Fall 2020 - Present (Every Semester)

Skills

Languages: Chinese (native), English (proficient)
Computer: **Java, Python, C++, LaTeX, HTML, CSS, ReactJS**, SQL/MySQL, MongoDB, Neo4j, Ocaml, PyTorch, MIPS Assembly
Developer Tools: Git/GitHub, Visual Studio Code, Android Studio, Tableau, Unreal Engine, Unity
Libraries: Pandas, NumPy, Matplotlib, OpenCV

Experience

Course Assistant for CS 411 (Database Systems) January 2024 – May 2024
University of Illinois at Urbana-Champaign *Champaign, IL*
- Grading homework and group assignments of over 400 students and give detailed feedbacks.
- Helping with managing in-class group discussion sessions, and helping with office hours.
- Guiding students in database systems concepts such as MySQL, MongoDB, Neo4j, query optimization, by simplifying concepts, illustrating examples, and facilitating practice exercises.

Research Assistant at Caesar Research Group April 2023 – Present
University of Illinois at Urbana-Champaign *Champaign, IL*
- Contributed significantly to the development of perpleweave.org, a dynamic web application designed to enhance networking opportunities among researchers attending academic conferences.
- Collaborated closely with cross-functional teams, working alongside UI/UX and Data Science team members, to design, build, and consistently improve the web app's functionality and user experience using **ReactJS**.
- Facilitated the analysis of SIGCOMM coauthorship datasets by extracting a list of the number of coauthors for each paper published for a year and total number of unique researchers for a given year using **Python** and creating coauthorship graph visualization using **NetworkX**.
- Officially endorsed by **SIGCOMM 22** as the networking platform for its participants, resulting in the enrollment of more than **200 conference attendees**, fostering valuable connections within the research community.
- Played a pivotal role in the recruitment process, meticulously reviewing resumes and assessing take-home assignments for over **20 prospective applicants**, contributing to the growth and strength of our research team.

Course Assistant for CS 124 (Intro to CS) January 2021 – May 2021
University of Illinois at Urbana-Champaign *Champaign, IL*
- Provided valuable assistance to students in comprehending Computer Science concepts and mastering **Java programming**.
- Demonstrated commitment by conducting 3-4 hours of virtual office hours weekly, offering dedicated support to students seeking clarification and guidance.
- Enhanced the learning experience by creating detailed walkthroughs for daily lessons, or offering alternative explanations to course content, ensuring a comprehensive understanding for all students.
- Fostered a collaborative learning environment by actively participating in online forums, promptly addressing student concerns related to homework assignments, machine projects (MPs), and providing personal reassurance and encouragement.

Selected Projects

Image Blending with Gradient-Domain Fusion | *Python, OpenCV, Google Colab* Sep. 2023 - Oct. 2023

- Implemented Poisson Blending technique to seamlessly blend an object from a source image into a target image.
- Enhanced blending results through the implementation of Mixed Gradients technique, resulting in better visual coherence and reductions in artifacts.
- Leveraged gradient-domain processing to convert a color image to grayscale while preserving important contrast information.

Flight Tickets Booking System | *ReactJS, NodeJS, Google Cloud Platform* Jun. 2022 - Aug. 2022

- Spearheaded the design and development of the web application's frontend using **ReactJS**, enhancing user experience and interface aesthetics.
- Implemented full CRUD (Create, Read, Update, Delete) operations for the passenger database, optimizing data management and accessibility, with seamless integration into **Google Cloud Platform**.
- Enhanced application functionality by introducing stored procedures and triggers, resulting in improved system responsiveness and user interaction.

Open Flights | *C++, VSCode* Oct. 2021 - Dec. 2021

- Utilized the OpenFlight dataset to devise an algorithm for finding the shortest path between two airports, optimizing travel route planning.
- Implemented **BFS Traversal** and **Dijkstra's Algorithm** to accomplish the project goal, demonstrating problem-solving skills and algorithmic expertise in project completion.
- Developed a **Degree Centrality Algorithm** to identify and rank the busiest and most popular airports globally, providing valuable insights into air travel trends.