

Yuxin Deng

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EDUCATION

The Pennsylvania State University

Bachelor of Computer Science and Mathematics

May 2022

Philadelphia, PA

- GPA: 3.62/4.0
- Dean's list from FALL 2019 to FALL 2021
- Related Courses: Data Structures and Algorithms

TECHNICAL SKILLS

Program Languages: C/C++, Java, HTML, R, Python, MySQL, Racket, Batch/Bash

Frameworks & Tools: Numpy, Scikit-Learn, PyTorch, Matplotlib, React, LaTeX, JSON, JUnit, Mockito

Operating Systems: Ubuntu, Linux/Unix, Windows

WORK EXPERIENCE

Education Product Research Intern

Jun 2021 - Sep 2021

ByteDance Ltd.

Shanghai, China

- Spearheaded the development of a full-stack application that can generate quiz questions and answers for elementary school students.
- Utilized **JSON** and **Python3** to create over 200 rules to auto-generate quiz and practice questions. Over 85% of these auto-generated questions covered correct content for the required knowledge learning process.
- Conducted user outreach to gather UI feedback for the project *Dali Artificial Intelligent Lamp*. Analyzed students' primary learning habits and popular educational products in the market to investigate demand.

Software Development Engineer Intern

Jun 2020 - Aug 2020

Yunjin Culture Travel Technology Co.

Guizhou, China

- Analyzed customer pain points, competitive products and designed a product-categorization sorting feature as well as the corresponding **relational database** schema for the new travel agent product prototype.
- Investigated into customer retention rate bottlenecks and delivered a popularity-based server-side sorting feature that covers products for over 1000 shopping malls. Improved user retention rate by around 10%.
- Improved system test coverage and reliability for online shopping mall searching port by implementing **integration tests** with **JUnit** and **Mockito**. Integrated new tests to the existing **Postman** test automation framework.

RESEARCH EXPERIENCE

Crowd-AI Group Research Assistant

Aug 2021 – Present

Advisor: Dr. Ting-Hao (Kenneth) Huang

Philadelphia, PA

- Built a Conversational XAI System as an AI pair researcher. It can understand and score unfinished works based on published HCI papers and recommend specific references to improve.
- Implemented a conversational AI that can explain how the decision of a classification model is made. Wrote an attribute performance function to find the most important parameters in the classification model, embedded them with **BERT** and **PyTorch**, and eventually decoded them into natural language.
- Collaborated with another researcher with the goal to design the next crowdsourcing voice assistant AI. Responsible for designing user surveys, conducting interviews, and analyzing data to improve the first prototype.

ACADEMIC PROJECTS

Database Development - Car Dealers Website | *Linux, MySQL, HTML, PHP*

Aug 2021 - Nov 2021

- Designed and architected a high-performance hierarchical tree database that can efficiently read, insert, and modify large-scale data by leveraging serialization.
- Prototyped and developed a **React-based** web application and deployed it to a **Unix-based** platform.

MapReduce-Style Wordcount Application | *C, Linux*

Jun 2021 - Aug 2021

- Implemented a multi-threaded word count application by using mapper threads and reducer threads.
- Optimized the degree of parallelism in the mapper stage and the size of the shared buffer to save execution time.