

# Daqian Zuo

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## EDUCATION

- University of Illinois Urbana-Champaign – Champaign, IL** 08/2022-12/2023
- ♦ Master in **Computer Science**
  - ♦ GPA: 3.8/4.0
  - ♦ Core Courses: Database Systems, Data Mining, Artificial Intelligence, Computer Vision, Interactive Graphics, Computer System.
- The Ohio State University – Columbus, OH** 08/2018-08/2022
- ♦ B.S. in **Computer and Information Science**, minor in Music
  - ♦ GPA: 3.5/4.0
  - ♦ Core Courses: Software Design and Development, Software Engineering Techniques, Algorithms, Network and Security, Database Systems, Operating Systems, Artificial Intelligence.

## SKILLS

- ♦ **Languages:** Python, Java, C, C++, Dart, JavaScript, HTML, CSS, MySQL, MongoDB, MQL, Ruby, Assembly
- ♦ **Software Development Tools:** Docker, Django, React, Vue, Jenkins, AWS, Streamlit, AngularJS, Flutter, Rails, Android Studio
- ♦ **Data Analysis Tools:** PyTorch, Anaconda, Jupyter Lab/Notebook, Pandas, scikit-learn, NumPy, Matplotlib, Altair, SGE, HPC

## INTERNSHIP

- Baidu, Beijing Baidu Technology Center** 05/2023-08/2023
- Full Stack Software Developer Summer Intern, Compas Monitoring Platform – Full Stack Software Application
- ♦ Developed features like AlarmWall that displays the statistics of release versions of current product line using **Vue.js** at frontend **MySQL** for data management/retrieval, **Python** as data processing tool, and **Go** at backend to provide API for frontend functionalities like navigating, filtering, and paging.
  - ♦ Achieved a 95% performance improvement and reduces the average API call time from 4 seconds to just 200 milliseconds through data indexing with MySQL and employing **Goroutines** along with **WaitGroups** to exploit parallelism,
  - ♦ Achieved an 80% performance improvement in homepage loading by employing lazy loading technique in the API calling logic.
- Shenzhen Bay Laboratory, BayRay Innovation Center** 05/2021-08/2021
- Full Stack Web Developer Summer Intern, ACS TAT Tracker – Full Stack Web Application
- ♦ Developed a web application as part of the Assay Control Software (ACS) to monitor the turnaround time (TAT) of samples by **PostgreSQL**, **Express**, **React**, **Node.js**.
  - ♦ Implemented web page with **React-Bootstrap**, proving CRUD operations to create, update and visualize issues by using **GraphQL** integration with **PostgreSQL** for data storage and retrieval
  - ♦ Containerized the ACS software and deployed to **AWS** to provide highly available and reliable services.
  - ♦ Performed end-to-end (E2E) test and verification and validation (V&V) following test plans and V&V report documented in JAMA.

## PROJECT

- Capstone Project at OSU: **CoachLink Application** 01/2022-07/2022
- ♦ Developed a cross platform (Android, iOS, web) application “CoachLink” which allows the user to post or apply for sport coaching jobs by implementing **Flutter** as the frontend framework and **Firebase**, **MySQL** as the backend non-relational and relational database. The project is sponsored by Joey Galloway, former NFL player and currently an analyst for ESPN.
  - ♦ For data security and privacy concerns, the project utilizes firebase authentication for user activities while implementing other databases on **mysql**. To optimize the query time and scalability all the records are indexed in the database.
  - ♦ Utilized sensors like GPS or Camera allowing user to quickly set up their account in onboarding stage. It also allows them to filter job post or other coaches based on location, level, or job type

## RESEARCH

- ETR: Efficient Title Reranker for Fast and Improved Knowledge-Intense NLP** 06/2023-01/2024
- Co-first Author & Research Assistant, Advised by Prof. Heng Ji, University of Illinois at Urbana-Champaign
- ♦ Implemented novel title reranking technique based on **T5** for 20x-40x faster reranking than vanilla passage reranker.
  - ♦ Introduced **Scaled Sigmoid Loss Function** to improve core metrics like **Recall@5**, **Loss**, and **Ranking Score**.
  - ♦ Achieved **four** State-Of-The-Art (best existing records) positions on the kilt knowledge benchmark, showcasing the effectiveness of Efficient Title Reranker and the sigmoid trick.
  - ♦ The paper of this work is currently on Arxiv and are currently under review on ICML, ACL, and Sigir.
- Machine Learning in Classical Music Classification** 06/2021-09/2021
- First Author & Research Assistant, Advised by Prof. RF. Murphy, Carnegie Mellon University
- ♦ Created a decision tree classifier which implements the naïve bayes model, logistic regression model, random forest, and cross validation using Python and scikit-learn to classify 3000 classical music raw files by composing styles, composers, etc.
  - ♦ Mitigated overfitting by reselecting features, which improved sensitivity by 14.5% without compromising specificity.
  - ♦ The paper of this work was accepted by *2021 International Symposium on Artificial Intelligence and Intelligent Manufacturing (AIIM 2021)* and was published on *SPIE - The International Society for Optical Engineering (ISSN: 0277-786X)*