

CHENGHAO MO

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OBJECTIVE

Seeking enrollment in a Fall 2024 Master's program in Computer Science or Electrical and Computer Engineering, focusing on computer systems, machine learning, and data analytics.

EDUCATION

UNIVERSITY OF ILLINOIS URBANA - CHAMPAIGN, IL, USA 2020.8 – 2024.5 (Expected)

Major: *Computer Engineering*

GPA: 3.94/4.00

- ECE 313 Probability with Engineering Applications A+
- ECE 448 Artificial Intelligence A
- ECE 438 Communication Networks A
- CS 411 Database Systems A
- ECE 385 Digital Systems Laboratory A

ZHEJIANG UNIVERSITY, Zhejiang, China

2020.9 – 2024.6 (Expected)

Major: *Electronic and Computer Engineering*

GPA: 3.98/4.00

RESEARCH EXPERIENCE

Optimizing Query Efficiency in Unstructured Data Analysis with Machine Learning

AIDB Project Supervised by Professor Daniel Kang, Data and Information System, UIUC Since 2023.5

- **Innovative Query Optimization Techniques:** Developed an optimized batched method for query caching, integrated Approximate Selection with Guarantees using Proxies algorithm (SUPG), and designed a specialized estimator for approximate aggregation.
- **Rigorous Evaluation and Benchmarking:** Established custom datasets and a comprehensive framework for evaluating the AIDB engine's efficiency and accuracy in querying semantically rich unstructured data.

Multiphysics High-Resolution Imaging Analysis

Supervised by Professor Qiwei Zhan, ZJU

Summer 2021

- Established a simulation environment in COMSOL and applied scientific machine learning to identify key factors affecting imaging resolution in multi-physics scenarios.

PUBLICATION

Akash Mittal, **Chenghao Mo**, Jiahao Fang, Chengsong Zhang, Tengjun Jin, Timothy Dai, Daniel Kang (Primary). *AIDB: a Sparsely Materialized Database for Queries using Machine Learning*.

Submitted to ACM SIGMOD/PODS International Conference on Management of Data, Santiago, Chile, June 9-15, 2024.

COURSE PROJECT

CS 411 Database Systems

Fall 2022

- Developed a website featuring a frontend designed with ReactJs and a backend database connected to Google Cloud Platform (GCP).
- The website includes visualizable charts and a convenient user interface, offering functionalities for student registration, course selection, search, and chatting.

ECE 385 Digital Systems Laboratory

Spring 2023

- Developed an FPGA game inspired by mechanics of Celeste using SystemVerilog, the game incorporates C code for keyboard interactions and VGA monitor display via the NIOS-II processor.

- The game is a 2D platformer emphasizing advanced physics like gravity and collisions, detailed animations of walking, jumping, dashing and hairstyles changes when moving.

HONORS AND AWARDS

Dean's List for Academic Excellence at UIUC	Spring 2023
Zhejiang University Scholarship - Third Prize	2022
Bronze Prize in the 15th "Dandelion" University Student Entrepreneurship Competition at Zhejiang University	Spring 2023
Zhejiang University Scholarship - Third Prize	2021
Honorable Prize at The Mathematical Contest in Modeling	Winter 2021

SKILLS

- Programming Languages: C/C++, Python, Cuda, Golang, SystemVerilog, Java, MySQL, MongoDB, Neo4j
- Framework: Pytorch, Flask, React.js, gin
- Softwares: MATLAB, PyCharm, Quartus, Git, Docker, COMSOL