

# Zicheng Ma

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## EDUCATION

- **University of Illinois Urbana-Champaign** US  
*Bachelor of Science in Computer Engineering GPA: 4.00/4.00* *July 2020 - Present*
- **Zhejiang University** China  
*Bachelor of Science in Computer Engineering GPA: 4.00/4.00* *July 2020 - Present*

*Relevant Courses and Grades: Computer Systems Engineering-A+, Data Structures-A+, Calculus II/III-A+, Database System-A, Analog Signal Processing-A+, Discrete Mathematics-A+....*

## SKILLS

- **Programming:** Python, C, C++, SQL, MongoDB, Neo4j, x86 assembly
- **Frameworks:** Pytorch, Open-mmlab and its downstream frameworks, ReactJS, Hexo
- **Tools:** Git, MySQL, Google Cloud, LaTeX, Markdown
- **Languages:** English(fluent), Chinese(native)

## PROFESSIONAL EXPERIENCE

- **Human Pose Estimation Research** Zhejiang, China  
*Undergraduate Researcher* *May 2022 - September 2022*
  - **Leader of a small group:** Worked 5+ hours per day in summer vacation as a leader of a small research group on human pose estimation.
  - **Uniform dataset format:** Preprocessed different datasets according to the experimental requirements to realize the interoperability of data set formats
  - **Design a new unsupervised training process:** Designed and used projection loss as a loss function to fine-tune cross-dataset training
- **Intelligent Mouse Cage Project** Zhejiang, China  
*Undergraduate Researcher* *June 2022 - August 2022*
  - **Investigated sensors and how to build the cage:** Helped design an intelligent mouse cage using various sensors and utilized information from sensors to better monitor the state of the mouse.
  - **Designed optical flow algorithm:** Major work was fine tuning and designing computer vision algorithms such as optical flow algorithm
- **Future Transportation Lab Research** Zhejiang, China  
*Undergraduate Researcher* *May 2021 - May 2022*
  - **Database Construction:** Built Auto-vehicle and used this vehicle to collect and build Scenes Database.
  - **Reception Field Model:** Designed a new model for CAVs(Connected Auto Vehicle) detection range.

## PROJECTS

- **Zinix System (C, x86 assembly)** Urbana-Champaign, US  
*Unix-like operating system* *December 2022*
  - **Basic functionalities:** Implemented an operating system supporting basic functionalities such as scheduling, interrupts, system calls, exceptions, and file systems.
  - **Self-designed features:** Used implicit free list and slab cache to implement a virtual memory allocation system. Also implemented advanced signals and speaker, hard-disk drivers.
- **Crime Map UIUC (MySQL, ReactJS, NodeJS)** Urbana-Champaign, US  
*Full-stack application visualizing criminal records around UIUC* *December 2022*
  - **Crime database and basic CRUD:** Implemented a database containing past crime logs around UIUC and allowed users do basic CRUD commands on the database through our web page.
  - **Advanced features:** Integrated Google Map API to show different crimes on a map to visualize them for users.
- **Database system for medical appointments (C++, B+ Tree)** Zhejiang, China  
*CS225 Algorithm Team Project* *May 2022*
  - **B+ Tree data structure:** Used C++ to build B+ Tree as the base for our database system.
  - **User-friendly UI:** Instead of using terminal commands, we implemented UI for our system to help users.
  - **SQL style query language:** We imitated SQL style query language to implement our system. Those who are familiar with SQL can learn ours quickly.

## HONORS AND AWARDS

- **Mathematical Contest In Modeling Finalist Award** (Top 2% of the competitors worldwide – May 2022)
- **2021 and 2022 National Scholarship** (Awarded to 2% of all university students in China) - October 2021 / 2022
- **Zhejiang University Scholarship - First Prize** (GPA rank 1 in the grade) - June 2021

## LEADERSHIP EXPERIENCE

- **Minister of Student Union Outreach Department** Zhejiang, China  
*Responsible for campus liaison work, attracting sponsorship, inter-school communication* *September 2021 - August 2022*
- **Minister of Coffee Club** Zhejiang, China  
*Built a new Coffee Club on campus and led more than 80 new members.* *September 2021 - May 2022*