

Tianrui Liu

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EDUCATION

University of Illinois Urbana-Champaign	Aug 2021 - Dec 2022
Master of Computer Science (GPA: 3.72 / 4.0)	Urbana-Champaign
• Core Courses: Database Systems, Deep Learning for Healthcare, Artificial Intelligence	
Michigan State University	Aug 2018 - May 2021
Bachelor of Computer Science with Honor (GPA: 3.82 / 4.0)	East Lansing
• Core Courses: Big Data Analysis, Computer Networks, Algorithm Engineering	

SKILLS LIST

Programming Languages: C / C++, Python, Java, PHP, JavaScript, HTML / CSS, SQL, OCaml, Assembly

Frameworks and Tools: Git, AWS, CMake, React, Vue, Node, LaTeX

Database and Analyses: MySQL, SQLite, Oracle, MongoDB, Jupyter, MATLAB, R

PROFESSIONAL EXPERIENCE

Software Engineer Intern	Apr 2021 - Aug 2021
iFlytek, Medical Product Development Department	Hefei, China
• Optimized a new communication system for speech recognition robots based on SIP and RTP protocols. Decreased failure rate caused by network transmission problems by 18%.	
• Achieved real-time communication with central control module to provide speech-recognition texts, which will be transferred to instructions for phone systems and data persisted on SaaS platforms. Served in 27 medical voice online service systems and 56 hospitals for online requests.	
• Maintained robots management module and achieved human-computer interaction by understanding user intentions, keeping track of conversation status, and carefully choosing a response strategy.	
Computer Science Research Associate	Jan 2019 - Oct 2019
Data Science and Engineering Lab, Michigan State University	East Lansing
• Crawled data from POST requests and selected web pages with XPath from XML document. Managed data in MySQL and performed data cleaning and collection with BeautifulSoup and CSV libraries.	
• Accomplished a text analysis auxiliary training system with Naive Bayes classifier to filter and match normalized data in order to optimize data storage in servers. Standardized over 180k reasonable data.	

PROJECT EXPERIENCE

Malleable Minds User Platform	Jan 2021 - May 2021
The Capstone Experience at Michigan State University [malleable-minds]	
• Restructured user platform for Malleable Minds that deployed on AWS and supported features including user login, registration, search and comment. Improved site performance and track usage metrics and user feedback.	
• Expedited real-time query data processing and responding by 80% through global APIs interface which imported to ReactJS, while connecting the database through PyMySQL.	
• Planned and constructed user log system which formatted logs through regular expressions of the Python re library.	
Mock SQLite: A Simulation of SQLite Database	Aug 2020 - Dec 2020
GitHub Source [liutiantian233/Mock SQLite]	
• Formed a simulation of SQLite Database, supported 9 common database tokens and features that allow user to sort data columns according their customized specifications.	
• Split input strings through regular expressions and analyzed query syntax. Supported 3 different input file formats, such as CSV, JSON, and XML. Achieved ACID properties of transactions to guarantee the correctness and reliability of the database.	
• Enhanced the database by creating effective loops with itertools in Python. Extracted parameterized queries and reuse wildcards with decorator.	
Student Union Bulletin Board System	Oct 2019 - May 2020
• Developed a bulletin board system with 7 main bulletin boards, which earned 50k+ users and 100k+ topics. Utilized HTML5+CSS3, OAuth, and JavaScript to complete page layout, create website login and realize Autofill of personal data. The conversion rate of the website is increased by 33%.	
• Helped eliminate unsafe factors by checking table data entry error, filtering output, and encryption Web development. Protected the website from malicious attacks such as SQL injection.	

HONORS & AWARDS

First Prize of National Olympiad in Informatics in Provinces	Aug 2017
Gold Medal of VEX Robotics World Championship	May 2016