# Tonglu Yang

◇ +1(608)-320-9249 ◇ tyang328@wisc.edu
◇ linkedin.com/in/tongluy/ ◇ Portfolio: tongluy.github.io/

## EDUCATION

**University of Wisconsin-Madison** Sep 2021 – May 2024
Bachelor of Science, Computer Science Madison, WI

- **GPA:** 3.80/4.00 | **Awards:** Linda B. Stern Scholarship for Women and STEM (**$5000**), Dean's List

## WORK EXPERIENCE

**Full Stack Developer | C#, MySQL, .NET, REST, Azure** Apr 2022 – Present
**Wisconsin Athletics** Madison, WI

- Scoped and built a cost-effective, scalable C# questionnaire system, cutting third-party app expenses by **$3000** annually. Empowered users to create, distribute and complete customized questionnaires.
- Built a MySQL database for 900+ athletes, conducted data validation for 15 question types using Regex, integrating REST API in .NET MVC, ensuring data procedures, and improving query response time by 13%.
- Onboarded **CI/CD** pipelines, integrated real-time Slack alerts, monitored Git version control in **Azure**.
- Led a team of 3 to troubleshoot slowness issue, using **Scrum** and **Agile** in Jira for efficient teamwork.
- Optimized Bootstrap 5 and MVC, improving server response time by 30% for up to 1000 concurrent users.

**Research Intern | C, Linux** Jan 2022 – May 2022
**UW-Madison** Madison, WI

- Enhanced processing efficiency for gene regulatory networks analysis with expanding datasets in C.
- Implemented **multithreading** to optimize parallel processing for datasets, utilized **stride scheduling** to ensure optimal task distribution across multiple processors, reducing analysis time by 37%.
- Utilized **copy-on-write** fork, **lazy zero-page** allocation to optimize memory usage, and **LRU caching** to enhance data retrieval, reducing memory allocation costs from 10000s CPU cycles to 100s CPU cycles.

**Software Engineer | Python, AWS, Docker, Kubernetes** Aug 2023 – Dec 2023
**Center for Healthy Minds** Madison, WI

- Collected user video data, aggregated it into AWS S3 buckets for optimized storage and Lambda integration.
- Analyzed video eligibility/expression by NumPy/Mediapipe/OpenCV in Python, reduced manual time by 70%.
- Utilized **Docker** for analysis, deployed it on **Kubernetes** for high scalability, reducing downtime by 14%.

## PROJECT

**File System Recovery Tool | C, Linux, GDB, QEMU** Jun 2023

- Developed a recovery tool to retrieve image files from disk, leveraging binary analysis to detect and recover jpg files, with metadata extraction for comprehensive digital data retrieval.

**Enhanced RPC | C, GDB, QEMU, Linux** May 2023

- Developed a custom RPC client library to facilitate seamless client-server interaction, reducing server-side errors by 20% through advanced request handling, blocking, and retry mechanisms.

**Database Management System | C++, SQL, Unix** Mar 2023

- Designed a single-user DBMS, with page-based buffer manager using Clock Algorithm for efficient replacement with heap file management for structured data storage and retrieval, and SQL query processing.

## SKILLS

- Language: C/C++, C#, Java, Python | Infra: AWS, Azure, GCP, Git, Unix, Linux, Bash, Shell