

YUNCHAO HOU

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Education

University of Illinois Urbana-Champaign (UIUC)

Expected Aug 2025

Master of Computer Science

GPA: 4.00/4.00

- Courses: Database Systems(**MySQL**,**NoSQL**), Cloud Computing (**AWS**, **Kafka**), Applied Parallel Programming (**CUDA**)

Jiangnan University

June 2023

Bachelor of Science in Computer Science

GPA: 3.80/4.00 (Top 1%)

Skills

Languages: C++, Python, C#, Java, TypeScript, JavaScript, SQL

Frameworks: Django, Flask, Node.js, SpringBoot, MyBatis, ASP.NET, React, WPF, Flink, Spark, Hadoop, CUDA

Databases: Redis, MySQL, PostgreSQL, MS SQL Server, SQLite, Iceberg

Tools: ArcGIS Pro, Kafka, RabbitMQ, Docker, Kubernetes, Nginx, gRPC, CICD, Git, Kibana, Jira

Cloud Services: AWS(S3, EC2, Lambda, API Gateway, Aurora, ElasticCache, Gateway), GCP, Azure

Experience

Esri - Geodatabase

May – Aug 2024

Software Engineer Intern

Redlands, CA

- Optimized the ArcGIS Pro Utility Network rule editing module with **C++**, reducing 98% time on the Duquesne dataset.
- Resolved hours-long topology restart delays during rule edits on large datasets by bypassing topology changes, directly modifying rules, and flagging affected assets when impact is minimal.
- Implemented new relational geodatabases designs that store various utility network meta-info using **Microsoft SQL Server**, serving dozens of electricity and water companies worldwide.
- Designed 6 unit tests using **Google Test** in **C++** for the new design, integrating them into **CI/CD** pipeline.

Momenta.ai

Aug – Dec 2023

Backend Developer Intern

Suzhou, China

- Engineered 10+ RESTful APIs with **Python Django** for Auto Replay System (ARS), a AI model evaluation system, facilitating management of replay jobs, datasets, releases, etc. for 300+ machine learning engineers.
- Scaled ARS by architecting 16-node **Kubernetes** cluster, ensuring the system adeptly processes 700k replay requests daily.
- Implemented **Python Celery** for asynchronous task management, leveraging **Redis** as the broker, automating release-mounting workflows and ensuring fault tolerance, saving engineers hours weekly from intervention.
- Cut \$2000/month cost by synchronizing 20TB data from **MySQL** to **Iceberg** data lake using **Spark** and **Flink CDC**.
- Lowered dashboard refresh interval from 30min to 20s, reduced 8% MySQL CPU usage, and enabled real-time analytics by replacing 8 CPU-heavy SQL cron jobs with 2 **Flink** jobs that aggregate data from **Kafka** streams.

miHoYo/HoYoverse

Dec 2022 – June 2023

Fullstack Developer Intern

Shanghai, China

- Developed 10+ **ASP.NET** APIs in **C#**, integrating **gRPC** with Protobuf serialization for efficient server-client interactions for miLine, a pivotal asset and project management platform utilized by 200+ Genshin Impact PMs and designers.
- Eliminated schedule update conflicts and achieved a seamless user experience by implementing **distributed locking** mechanism with the Redlock algorithm using **Redis** cluster.
- Created 5 pages using **React.js** for PMs to schedule projects, including a sophisticated interactive custom Gantt chart.
- Established a robust, high-coverage unit test system using xUnit, incorporating it as a stage in GitLab **CICD** pipeline.
- Automated telemetry system deployment on GitLab **CICD**, and enabled CORS on **Nginx** for cross-domain communication.

Tencent

June – Sept 2022

Software Engineer Intern

Shenzhen, China

- Revolutionized Naruto Mobile game's version evaluation by engineering an advanced image similarity algorithm in **Python** with **OpenCV**, slashing anomaly detection duration by over 44% and halving mis-detections.
- Enhanced Unreal Engine with **C++** ReportBug module, automating call stack and time fetch, saving tester hours weekly.
- Automated bug alert by swiftly identifying periodic anomalies in CPU usage using Fourier transform in **Python**.

Projects

CS411 Database Systems Project: Burger Crypto

Feb – Apr 2024

- Crafted **React** UI for a crypto trading platform with Ant Design, enabling trade simulations with real-time prices.
- Built an efficient back-end and RESTful APIs using **Node.js** in **JavaScript**, processing trades via CoinCap API.
- Deployed the project to **Google Cloud** Compute Engine using **Docker** images managed in DockerHub for efficiency.

Martin's Online Store

Mar – May 2023

- Built RESTful APIs for an admin website and mobile store app using **Java SpringBoot**, **MyBatis** and **MySQL**.
- Halved bandwidth and 30% latency by leveraging **AWS S3** as a CDN for static file storage.