

# GAOLE DAI

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## EDUCATION

- Rice University** Aug. 2022 - Dec. 2023 (Expected)  
Master of Computer Science (GPA: 3.90/4.00) Houston, Texas
- University of Nottingham Ningbo China** Sept. 2018 - Jul. 2022  
Bachelor of Science with Honors in Computer Science (GPA: 3.86/4.00, Summa Cum Laude) Ningbo, China
  - Awards: **Outstanding Graduate** in 2022 & **Scholarship** for Academic Excellence in 2019, 2020 and 2021

## PROGRAMMING SKILLS

- Languages:** Java (Proficient), Python (Proficient), C/C++, SQL, JavaScript, TypeScript, MATLAB, Haskell
- Frontend:** React, Vue, Material UI, Bootstrap, jQuery, Node.js, Express.js, Angular, Ajax
- Backend:** Spring Boot, MyBatis-Plus, gRPC, RESTful, Redis, Flask; **Database:** MySQL, MongoDB, Cassandra
- Others:** OpenCV, OpenGL, TensorFlow, PyTorch
- Tools:** Git, Maven, Gradle, Postman, Navicat, VSCode, IntelliJ, PyCharm, Anaconda, Blender, Visual Paradigm

## WORK EXPERIENCE

- Netflix, Inc.** May. 2023 - Aug. 2023  
Software Engineer Intern Los Angeles, California
  - Created an **automated tool** which recommends thumbnails based on creative strategy for building promotional artwork, used by content strategists and designers, yielding **reduction in average task time from 2 hours to 2 minutes**.
  - Connected creative strategy and image discovery internal tools via **gRPC** by updating the source **proto** in each service.
  - Created front-end interface using **React** following and leveraging internal styling guidelines and frameworks. To support the backend, **GraphQL** endpoints and schema definitions were designed and implemented in each service.
  - Builds were processed on a **Jenkins** server with **Gradle** as the build tool for managing the Java project.
  - Process and data workflow orchestration defined with **Netflix's Conductor orchestrator**, which allowed for config file based task input/output routing and DAG of necessary process dependency resolution.
  - Still recommendation performed with frame visual search model.
  - All code was tested using **Spock** and **Groovy**, achieving a minimum of **80%** code coverage.
- Youquan Technology Development Co., Ltd.** Jun. 2022 - Aug. 2022  
Software Development Engineer Intern Hangzhou, China
  - Built and deployed the real-time monitoring screen visualization and management functions based on **Java** with **Spring Framework** and Chinese **ORM framework** for the restaurant kitchen supervision web application, which handled **10 million** records in total and was accessed by **550,000+ merchants**.
  - Denormalized** and **optimized** legacy **MySQL** database by leveraging **query plans** to identify performance bottlenecks, ultimately yielding **15% faster query performance**.
  - Optimized **distributed MySQL** database performance with **DB sharding** and **indexing**.
  - Created **unit and integration tests** with **JUnit** to ensure correct behavior, which would run on **GitLab** pull requests, whose **CI/CD** pipelines were managed by **Jenkins**.
- City Cloud Technology Co., Ltd.** Jun. 2019 - Jul. 2019  
Product Manager Intern Hangzhou, China
  - Identified user requirements through customer research and feedback collection and improved the City Brain payment application user interface through **iterative prototyping** and **user testing**.
  - Produced technical specifications and requirement documents with analytical and quantitative skills along with **data visualizing** and processing.

## PROJECTS

- AI-based Image Feature Recognition System** Jun. 2021 - May 2022
  - Developed a self designed web-based system which handled image feature extraction, recognition, and analysis and aimed to help users with similar image sorting problems.
  - Created self hosted AI driven image feature extraction system + similar image identification and grouping service.
  - Developed frontend with **React** using **TypeScript** and **Bootstrap**, backend HTTP API server implemented with **Python** and **Flask**.
  - Dockerized** production image deployed to **AWS EC2** with **MySQL AWS RDS** instance for long term persistence.
  - Registered and managed domain name with **AWS Route53's DNS** server.
  - Trained and optimized four image retrieval models including constructing **CNN** and **GAN** that could automatically analyze users' input images, which include texts and background information based on **Python** and **PyTorch** with **Jupyter Notebook** for model training.
  - Obtained China **Software Copyright** Certificate (*No. 2021SR1132538*).
- Classroom Attendance Reporting System** Sept. 2020 - May 2021
  - Led a team of 5 to create **facial recognition** based **classroom attendance** system with **professor admin portal**.
  - Leveraged **Raspberry Pi** connected camera to run a facial recognition algorithm which associated faces with student labels and achieved **96%** accuracy.
  - Created **MongoDB** document schema and **Python Flask HTTP** server backend that would communicate with the camera and admin portal, introduced database auto-cleanup mechanism to achieve a more efficient DB performance.
  - Implemented frontend with **Bootstrap** and **jQuery-Ajax** to integrate with the **RESTful** backend.