

Rory Cai

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EDUCATION

University of Michigan, Ann Arbor

Bachelor of Science in Computer Science, Minor in Statistics — GPA: 3.90

Ann Arbor, MI

Jan. 2022 – Dec 2024

University of Wisconsin, Madison

Bachelor of Science in Computer Science — GPA: 4.0

Madison, WI

Aug. 2020 – Dec. 2021

EXPERIENCE

C++ Software Engineer

May 2022 – Present

Michigan Medicine, Radiology Lab

Ann Arbor, MI

- Spearheaded development and enhancement of a lesion segmentation software for radiology applications
- Championed a significant optimization within image segmentation module, achieving a 6x speed improvement from 1 minute to 10 seconds utilizing OpenCV
- Actively leading deployment of a neural network model for post-treatment lesion evaluation. Successfully managed the model's migration from Linux to Windows, ensuring seamless integration and functionality

Java Developer Intern

May 2021 – Sep 2021

JD.com

Beijing, China

- Contributed to the development of a microservice-based platform using SpringBoot for service order assignments
- Designed table structures and object hierarchies, leveraging the MyBatis framework
- Tested application using Apache Tomcat in local environment, enhancing web responsiveness through Redis Cache
- Integrated Rabbit Message Queue for efficient peak traffic management and ensuring uninterrupted service

Frontend Developer Intern

May 2020 – Sep 2020

Guangzhou Tongwang Technology Development Co. Ltd

Guangzhou, China

- Spearheaded the development of a furniture customization webpage using Vue.js, encompassing features include three-level category linkage and lazy-loading tree structures
- Crafted a user-centric form submission and table search framework, integrating fuzzy queries for search functionality and utilizing Regular Expression for robust form validation

PROJECTS

Full-Stack Web Development Project: Insta 485

Feb 2023 – May 2023

- Engineered a full-stack web application utilizing Flask for the REST API backend and React for the frontend, seamlessly integrating both server-side and client-side dynamics using Jinja2 templates
- Created a platform reminiscent of Instagram, termed "Insta 485", allows users to share photo-text posts with followers, ensuring all posts are visible only to the followers and enabling users to view posts from those they follow

MapReduce Framework Development: Madoop

Feb 2023 – May 2023

- Developed a MapReduce framework enabling distributed data processing across computer clusters
- Architected a Manager-Worker model, utilizing OS concurrency facilities and networking sockets for efficient task distribution and execution

Search Engine Development

Feb 2023 – May 2023

- Developed a search engine using information retrieval concepts tf-idf and PageRank for effective data processing
- Implemented a segmented inverted index of web pages through a series of MapReduce programs and designed an Index server with a REST API that returns search results in JSON

Compiler Development for Decaf Programming Language

Feb 2023 – May 2023

- Utilized Lex to develop a scanner, and employed Bison for the syntax analysis phase to create a robust parser.
- Traversed parse tree for in-depth semantic analysis and subsequently generated SPIM-simulator-compatible code
- Enhanced register allocation efficiency by implementing graph coloring, leveraging Chaitin's algorithm, to optimize resource usage and improve runtime performance.

The Legend of Zelda (1986) Dungeon 1 Replica (Unity)

Jun 2023 – Aug 2023

- Used Unity to replicate the first dungeon, developing prefabs for Link, weapons, and enemy characters.
- Implemented smooth room transitions and integrated animations for characters with Unity's Animator tool.
- Devised a custom weapon system that allows for property combinations and weapon-leveling enhancements.

Sneaker Categorization

Oct 2022 – Dec 2022

- Build a sneaker categorization model with tensorflow platform
- Implement the model with Convolutional Network, Resnet pre-trained model and Efficient Net pre-trained model

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL, JavaScript, HTML/CSS, R, C#, Swift

Frameworks: TensorFlow, PyTorch, React, Node.js, Flask, JUnit, Rest API, MAVEN, SpringBoot

Developer Tools: Git, Docker, GCP, AWS, VS Code, Visual Studio, Unity, Unreal Engine