

JIAYUAN GU

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EDUCATION

Cornell University Ithaca, NY Spring 2021 - Dec 2023

Bachelor of Arts in Computer Science GPA: 3.9/4.0

University of Southern California Los Angeles, CA Fall 2019 - Fall 2020

Bachelor of Arts in International Relations and Data Science GPA: 3.7/4.0

Coursework: Algorithms, Software Engineering, Database, Operating Systems, Robotics, Data Structures and Functional Programming, Distributed Systems, Cloud Computing, Computer Networks, Machine Learning

PROFESSIONAL EXPERIENCES

AI-Learners, Ithaca, *Software Engineer Intern* May. 2022 - Aug. 2022

- Built the front-end analytics page that shows users' performances in **React** for AI-Learners, which empowers kids with disabilities to learn math through personalized computer games
- Initiated front-end testing with **Cypress** and launched beta version with **50%** more daily active users

Cornell Hack4Impact, Ithaca, *Developer Lead* Feb. 2022 - May. 2022

- Developed an online Law Form Filler in **React**, **Express.js**, and **TypeScript** for Earth Law Center (ELC) to simplify and automate the creation of eco-centric laws for legislators, speeding up the process by **30%**
- Built the entire front-end with teammates in **Material UI** and provided feedback to iterate on design
- Implemented **real-time** document editing by integrating Google Docs API into our Express.js **RESTful APIs**

Cornell Design&Tech Initiative, Ithaca, *Technical Product Manager* Feb. 2022 - Sep. 2022

- Led the development of CUApartments in **React** and **Firestore**, a website for Cornell students to view and share apartment reviews to make their apartment finding easier; mentored 5 developers to master the tech stack
- Optimized search functionality and decreased search latency by **65%** through **caching** and **debouncing**
- Designed technical roadmap and tracked workflow through Git and **GitHub** issues and projects

RESEARCH EXPERIENCE

Natural Language Processing Research Assistant, Cornell University Jun. 2021 - Sep. 2021

- Implemented a model-agnostic end-to-end pipeline to perform automatic error analysis for Document-level Event Extraction and co-authored a paper accepted at **ACL 2022** with Professor Claire Cardie
- Designed a sequence of unit transformation for each common error type to aggregate statistics

Natural Language Processing Research Assistant, Cornell University Sep. 2021 - Dec. 2021

- Designed a Long-Document Summarization Model based on **Longformer** to overcome the document size limitation of current models with Prof. Claire Cardie
- Built a tree-structured architecture by recursively chunking the texts and summarized each with local summarizers
- Experimented with different local summarizer choices (**Bart**, T5, etc) and surpassed baseline by **24.6%**

PROJECT

Earth and Grass (EGOS) Operating System Kernel, Cornell University Feb. 2022 - May. 2022

- Developed the EGOS OS kernel in **C** and open-sourced the project for education purposes
- Implemented **user-level multithreading APIs** for EGOS with **split binary semaphores** and **mesa monitors**
- Built a process scheduler on Multi-Level Feedback Queue and reduced jobs' average turnaround time by **28%**
- Developed a FAT file system with virtualized block store as an API and reduced file access latency by **43%**

SKILLS

- **Technologies/Tools:** React, Redux, Express.js, Node.js, Flask, Django, Kafka, Spring, Spring Boot, Docker, Kubernetes, Object-Oriented Design, Multi-threading, Linux, AWS, Azure, PyTorch, Git, Figma
- **Programming Languages:** Java, C++, C, Python, JavaScript, TypeScript, HTML/CSS, Go, OCaml
- **Database:** Firebase, Redis, MongoDB, Spark, Hadoop, Hive, SQL, PostgreSQL, MySQL