

# Qiyu (Allen) Zhong

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## EDUCATION

### Union College

Schenectady, NY

Bachelor of Science (BS) in Computer Science | Minor in Statistics

June 2022

Coursework: High Performance Computing, Neural Networks, Regression Analysis, Strategy of Experimentation, Data Structures

## TECHNICAL SKILLS

### Programming and Scripting Languages:

Python 3, C18, C++19, Java SE, MySQL 8.0, PowerShell, Rust, MIPS

### Web and Mobile Development:

Flask, Django, HTML, CSS, Vanilla JavaScript, Spring Boot, Flutter

### Data Science, Machine Learning, and Cloud Computing:

Pandas, PyTorch, SciPy, Matplotlib, Tableau, Docker, Nginx

### Software Engineering and Version Control:

Google Cloud Platform, AWS EC2, Ali Cloud ECS, Git

### Networking and Operating Systems:

macOS, Windows, Ubuntu, CentOS, Nginx, QoS

## WORK EXPERIENCE

### Coding Minds Academy, CS Tutor

July 2021 – December 2021, September 2023 – March 2024

- Lead an 8<sup>th</sup> grader to build an eye-tracking APP reminding tiresomeness, with MediaPipe in Python and OpenCV in C++
- Taught basic Java, C++, Python, JavaScript, and FlutterFlow to Irvine K-6 students, with code review and live-demo

### Textbook Development, Suzhou Flying Technology Co., Ltd., Assistant Editor

May 2023 – August 2023

- Trained GPT-3.5 with Simplified Chinese to generate contents of 2 textbooks for vocational students in Yunnan Province
- Extracted the keywords from textbooks to make artificial mappings and hand-labelled textual data to make revisions

### Geospatial Data Augmentation of Anti-Fraud Detection, China Merchant Bank, Pre-Loan Risk Management Intern

July 2023

- Replicate methodologies for papers about anti-fraud detection using geospatial data and graph-based ML algorithms
- Practice case review by querying relevant internal databases on car loan applications by citizens in mainland China

### Union College, Residential Life & Housing, Residential Advisor

September 2019 – March 2020

- Stayed tuned with 30 West College first-year students through 1-on-1 talks, floor programs, and college-wise guidance
- Secured the residence with weekly duties and monthly inspections with campus safety with weekly & biweekly reports

## PROJECTS

### House Assortment Organizing System, AgentScope Bootcamp, Beijing

March 2024 – Present

- Use Gradio, simulated furniture specs, stable diffusion, and ModelScope to build a study desk recommendation pipeline

### Kamen Rider Blade Roleplay Simple Version, InternLM Bootcamp #1, Shanghai

January 2024 – Present

- Collect gigabytes of multi-modal data from Kamen Rider Blade's media to put up a dataset mirroring the media's verse
- Apply a PEFT fine-tuner and RAG modules in the models training a multi-agent system to interact with the characters

### Center for Geospatial Analysis (CGA), Harvard University

August 2022 – July 2023

- Tested and debugged the CGA professors and lab researchers' KNIME workflows with the node-based analytical toolkits
- Attempted to develop an extension of NetworkX and PyG for mining geospatial graph data on community detection

### High Performance Computing, Union College

April 2022 – June 2022

- Applied MPI and OMP in C to simulate vector operations and numerical integration of Pi with an average 20% speedup

### Place Recognition at Union College, Union College

September 2021 – June 2022

- Shot on 30 campus buildings for 15000 photos, converted formats in Apple Photos, and feature engineered with Python
- Used scikit-learn models to classify 8 buildings in 5000 photos, with a LaTeX paper for model performance analysis done

### Regression Analysis, Union College

January 2021 – March 2021

- Mined a U.S. university admissions dataset to infer acceptance rates with 8 statistically significant factors out of the 20
- Made 5 iterations on a 3-way ANOVA model with ablation studies, with an  $R^2$  adjusted of 0.8 on the engineered data

### Data Structures, Union College

January 2020 – March 2020

- Implemented a BST-based English thesaurus for storing the corpse of English words for a retrieval task with BoW model

### Introduction to Connected Intelligent Systems, Peking University

July 2019 – August 2019

- Studied basic digital circuits, signal processing and simulation, and neural networks to understand the C-I infrastructure
- Read industry-based analytical reports regarding the trend of development in the 5G communication networks and CIS

## LEADERSHIP & EXTRACURRICULAR ACTIVITIES

### Stanford University, Code in Place Virtual Program, Volunteer

April 2021 – May 2021

- Taught a diverse group of students on basic Python control flow and data structures with real world examples and Karel

### Union College, Chinese Students & Scholars Association, Tech Group Member

January 2020 – June 2021

- Volunteered to design of an auxiliary website that uses past course selection data to suggest classes to take every term

### Union College, Society of Automotive Engineers (SAE) Aero, Member

September 2018 – March 2020

- Served as the pod engineer to research, deploy, and debug the electronic system in FrSky for a radio-controlled plane