

ZHHAO WANG

+1 (412) 214-2196 | zhihaowang@cmu.edu | [linkedin.com/in/zhihao-wang](https://www.linkedin.com/in/zhihao-wang)

EDUCATION

Carnegie Mellon University, School of Computer Science

Master of Software Engineering

Pittsburgh, PA

Aug 2021 – Dec 2022

- Teaching Assistant: 11-603 Practical Programming with Python (Summer 2022 Semester)
- Research Assistant at LTI: Improving the infrastructure of *Sail()* platform, an interactive online learning platform, to support CMU courses

China University of Mining and Technology, Beijing, School of Science

Bachelor of Science in Information and Computing Science

Beijing, China

Sep 2013 – Jun 2017

Peking University, National School of Development

Bachelor of Economics (double major)

Beijing, China

Sep 2014 – Jul 2017

WORKING EXPERIENCE

data.ai (formerly App Annie)

Senior Backend Software Engineer & Scrum Master

Beijing, China

Feb 2018 – Jul 2021

- Designed and built a new unified connection workflow to migrate 30+ platforms to microservices with a scalable solution to complete Apple and Google's Multi-Factor Authentication, reducing time cost by 50+% and improving success rate by 30+%.
- Designed and built internal troubleshooting tools and established monitoring dashboards and to quickly locate issues with user authentication, data scraping and ETL jobs, reducing Mean-Time-To-Repair by 50+% from 3+ days to 1~2 days.
- Migrated legacy data service from monolithic Django application to Python (using Flask) and Go container-based microservices to Amazon ECS. Designed and implemented unified query language translation, data aggregation and data permission control.
- Upgraded internal Node.js scraping framework by integrating Google's puppeteer to support headless browser-based scraping tasks and supported Google Firebase integration by implementing browser-based scraping tasks and ETL tasks.
- Built Connect Source Analysis Report and Ascend UI including visualizations, connection and user management using React.
- Built a service configuration management system using Apollo and won Best Engineering Excellence Award in the 4th Hackathon.
- Led a Scrum team of 6+ as Scrum Master and facilitated team toward goals by coordinating with external teams in different time zones, and hosting sprint planning meetings, daily Scrum meetings to manage projects, and retrospectives to help team locate issues.

VIPKID

Software Engineer & Software Engineer Intern

Beijing, China

Aug 2016 - Feb 2018

- Built microservices with Flask, gRPC, Java, SpringBoot to support VIPKID App, VIPKID School, internal systems, etc.
- Designed and built asynchronous task system with Celery for Dino English App and its WeChat platform.

SELECTED PROJECTS

Troutwood Enterprise Portal

Development Lead | CMU MSE Studio Project | Jan 2022 - Dec 2022

- Designed the architecture and led the software development including setting up GitHub and AWS infrastructures with CI/CD pipeline, and standardizing the working processes to support PoC, development, testing, and deployment. Tech stack: React, GraphQL, AWS Lambda, AWS Amplify, AWS AppSync, Amazon S3, AWS CloudFormation, Amazon EventBridge, Figma, etc.
- Implemented Scrum for the team of 5 by setting up Scrum process and norms with the toolchains and workflows.

ETL Processing on AWS using Apache Spark

CMU Advanced Cloud Computing | Feb 2022 – Mar 2022

Designed and implemented high-performance and cost-effective ETL jobs to process a large web-crawled corpus (~100GB before uncompressed) using Apache Spark on Amazon EC2.

Distributed Bitcoin Miner

CMU Distributed Systems | Sep 2021 - Oct 2021

Built a TCP-like network protocol atop UDP that supports handling lost, duplicated, or corrupted Internet packets, and failing clients and servers; implemented bitcoin miner, client, and server with failure handling and round-robin load balancing with the protocol.

Raft Consensus Implementation

CMU Distributed Systems | Nov 2021

Implemented Raft Consensus Algorithm with leader election and log replication in Go.

Peking University Course Trading Market

Founder & Developer | Independent Project | Dec 2016 - Feb 2018

Created a third-party information exchange platform with both website with Flask and WeChat Mini-Program with Node.js, which facilitated course swapping among students at National School of Development at Peking University.

SKILLS

Programming Languages: Python, Go, JavaScript, Java, SQL, R

Data Storage: MySQL, PostgreSQL, MongoDB, Redis, Amazon RDS, S3

AWS: *Certified Solutions Architect*, EC2, ECS, S3, Lambda, Amplify, Step Functions, CloudWatch, IAM, Terraform, etc.

Tools & Frameworks: Flask, Django, React, Spark, Docker, Kubernetes, Git, Jenkins

DevOps: Sentry, Kibana, New Relic, Datadog, Amazon CloudWatch