

# ZHHAO WANG

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## EDUCATION

### Carnegie Mellon University, School of Computer Science

*Master of Software Engineering*

Pittsburgh, PA  
Aug 2021 – Dec 2022 (expected)

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

*Bachelor of Science in Information and Computing Science*

Beijing, China  
Sept 2013 – June 2017

### Peking University, National School of Development

*Bachelor of Economics (double major)*

Beijing, China  
Sept 2014 – July 2017

## PROFESSIONAL EXPERIENCE

### App Annie

Senior Backend Software Engineer & Scrum Master

Beijing, China  
Feb 2018 – July 2021

- Designed and built new unified connection workflows to migrate 30+ platforms to microservices with a scalable solution to complete 2FA, reducing time cost by 50% and improving success rate by 30%. Established *Kibana* monitoring dashboards and troubleshooting tools to promptly react to third-party platform changes on user authentication.
- 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.
- Maintained scraping tasks and promptly reacted to platform changes. Developed internal tools for troubleshooting and enhanced monitoring to quickly locate issues, reducing Mean-Time-To-Repair by 50+% from 3+ days to 1~2 days.
- Upgraded internal *Node.js* scraping framework by integrating *puppeteer* to support headless browser-based scraping tasks and supported Google Firebase integration by implementing browser-based scraping tasks and ETL tasks.
- Led miscellaneous backend projects including alert improvement, proxy management, *Python* 2to3 upgrade.
- Built *App Annie Connect* Source Analysis Report and *App Annie Ascend* UI including data visualizations, connection management, and user management using *React*.
- Led a Scrum team of 6+ 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

Backend Software Engineer

Beijing, China  
Aug 2016 – Feb 2018

- Built microservices with *Flask* and asynchronous task system with *Celery* for Dino English App and WeChat platform.
- Developed VIPKID School resource management and course booking management services with *Java* and *SpringBoot*.
- Built microservices with *Python* and *gRPC* to support VIPKID iOS, iPadOS, Android applications.
- Built an internal ticket system with Gitlab *OAuth* integration on which engineers send requests for changes.

## PROJECTS

### AWS Auto-Scaling Controller

Designed and implemented a workload-aware Auto-Scaling Controller for machine learning web application on EC2 using *AWS Lambda*, *AWS Step Functions*, and *Terraform*.

Jan 2022 – Feb 2022

### Distributed Bitcoin Miner

Built a TCP-like network protocol on top of UDP (using *net* package of *Go*) with capabilities of handling lost, duplicated, or corrupted Internet packets, as well as failing clients and servers; implemented bitcoin miner, client, and server with failure handling and round-robin load balancing on top of the protocol.

Sept 2021 – Oct 2021

### Raft Consensus

Implemented Raft Consensus Algorithm with leader election and log replication in *Go* based on paper *In Search of an Understandable Consensus Algorithm*.

Nov 2021

### Peking University Course Trading Market

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.

Dec 2016 – Feb 2018

## SKILLS

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

**Data Storage:** MySQL, PostgreSQL, MongoDB, Redis

**AWS:** EC2, ECS, S3, Lambda, Step Functions, CloudWatch, IAM, Terraform

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

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