

# ZHHAO WANG

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## EDUCATION

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### Carnegie Mellon University, School of Computer Science

*Master of Software Engineering*

Teaching Assistant: 11-603 Practical Programming with Python (Summer 2022 Semester)

Research Assistant at LTI: Improved infrastructure of *Sail()* platform for supporting CMU courses

Pittsburgh, PA

Aug 2021 – Dec 2022

### 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

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### data.ai (formerly App Annie)

Senior Backend Software Engineer & Scrum Master

Beijing, China

Feb 2018 – Jul 2021

- Devised 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+%.
- Migrated legacy data service from monolithic Django application to Flask and Go microservices to ECS by developing unified query language translation, data aggregation and permission control, improving website & API performance by 50+%.
- Upgraded internal Node.js scraping framework by integrating puppeteer to support browser-based scraping; added Firebase integration by implementing data scraping and ETL tasks, making data.ai the 1<sup>st</sup> company to support Firebase in the industry.
- Designed and developed 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.
- Built Connect Source Analysis Report and Ascend UI including visualizations, connection and user management using React.
- Led a Scrum team of 6+ as Scrum Master and facilitated team toward goals by coordinating with external teams, 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

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

## SELECTED PROJECTS

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### Troutwood Enterprise Portal

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

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

### Resource Scheduling in Kubernetes

CMU Advanced Cloud Computing | Mar 2022 – Apr 2022

Formulated and developed various k8s job scheduling policies using k8s scheduler extender and Gang scheduling with kube-batch scheduler. Optimized performance of policies based on job completion time and computing resource preferences.

### 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) and ML training jobs using Apache Spark and HDFS on Amazon EC2.

### Distributed Bitcoin Miner

CMU Distributed Systems | Sep 2021 - Oct 2021

Built a TCP-like network protocol atop UDP; implemented bitcoin miner with failure handling and round-robin load balancing.

### Peking University Course Trading Market

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

Created a third-party information exchange platform to accelerate course swapping with Flask and Node.js.

## SKILLS

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**Programming Languages:** Python, Go, JavaScript, Java, C++, C, 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, GraphQL

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