ZHIHAO WANG

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EDUCATION

Carnegie Mellon University, School of Computer Science   Pittsburgh, PA
Master of Software Engineering   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, to support CMU courses

China University of Mining and Technology, Beijing, School of Science   Beijing, China
Bachelor of Science in Information and Computing Science   Sep 2013 – Jun 2017

Peking University, National School of Development   Beijing, China
Bachelor of Economics (double major)   Sep 2014 – Jul 2017

WORKING EXPERIENCE

data.ai (formerly App Annie)   Beijing, China
Senior Backend Software Engineer & Scrum Master   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 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 config 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, and hosting sprint planning meetings, daily Scrum meetings to manage projects, and retrospectives to help team locate issues.

VIPKID   Beijing, China
Software Engineer & Software Engineer Intern   Aug 2016 - Feb 2018
- Built microservices with Flask, gRPC, SpringBoot; designed and built asynchronous task system with Celery.

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, Lambda, Amplify, AppSync, S3, CloudFormation, EventBridge, Figma, etc.
- Implemented Scrum for the team of 5 by setting up Scrum process and norms with the toolchains and workflows.

Resource Scheduling in Kubernetes   CMU Advanced Cloud Computing | Mar 2022 – Apr 2022
Designed and implemented various k8s job scheduling policies using k8s scheduler extender and Gang scheduling with kube-batch scheduler. Optimized the 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 facilitate course swapping with Flask and Node.js.

SKILLS

Programming Languages: Python, Go, JavaScript, Java, 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