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)

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

PROFESSIONAL EXPERIENCE

Language Technologies Institute, Carnegie Mellon University   Pittsburgh, PA
Research Assistant   May 2022 – Aug 2022
• Improving the infrastructure of *Sail()* platform, an interactive online learning platform, to support CMU courses.

data.ai (formerly App Annie)   Beijing, China
Senior Backend Software Engineer & Scrum Master   Feb 2018 – Jul 2021
• Designed and built new unified connection workflows to migrate 30+ platforms to microservices with a scalable solution to complete Two-Factor Authentication, reducing time cost by 50% and improving success rate by 30%.
• 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.
• 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 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+ 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   Beijing, China
Software Engineer & Software Engineer Intern   Aug 2016 - Feb 2018
• Built microservices with Flask, gRPC, Java, SpringBoot to support VIPKID App, VIPKID School, internal systems, etc.
• Built asynchronous task system with Celery for Dino English App and WeChat platform.

SELECTED PROJECTS

Troutwood Enterprise Portal   Full Stack Engineer & Scrum Master | CMU Studio Project | Jan 2022 - Dec 2022
• Designing the architecture of the Troutwood Enterprise Portal and implementing the MVP. Tech stack: React, GraphQL, AWS Lambda, AWS Amplify, AWS AppSync, Amazon S3, Amazon SNS, AWS CloudFormation, Figma, etc.
• Implemented Scrum and led a Scrum team of 5 engineers.

ETL Processing on AWS using Apache Spark   CMU Advanced Cloud Computing | Feb 2022 – Mar 2022
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 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.

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
Data Storage: MySQL, PostgreSQL, MongoDB, Redis
AWS: *Certified Solutions Architect,* EC2, ECS, S3, Lambda, Step Functions, CloudWatch, IAM, Terraform, etc.
Tools & Frameworks: Flask, Django, React, Spark, Docker, Kubernetes, Git, Jenkins
DevOps: Sentry, Kibana, New Relic, Datadog, Amazon CloudWatch