KAIJUN ZHU © kaijunz.com

kaijun.zhu0629@gmail.com | 1050 N Stuart St, APT 903, Arlington, VA 22201 | +1-6073795124

EDUCATION

Georgia Institute of Technology	*M.S. in Computer Science (2021-)*	GPA 4.00/4.00
University of Illinois at Urbana-Champaign	*M.S. in Engineering (2016')*	GPA 3.75/4.00
Southwest Jiaotong University, China (Honor Student)	*B.S. in Civil Engineering (2014')*	GPA 3.78/4.00

SKILLS

Programming/tools: • python • TypeScript • Java • AWS • React • NodeJS • SQL • MongoDB • Git
Technical Skills: • Algorithms • Data Structures • System Designs • Object-Oriented Programming

PROFESSIONAL EXPERIENCE

AMAZON HQ2, Arlington, VA
Software Development Engineer – Fullstack May 2021 – present

Monera – A Multi-tenant retail web **Platform** to showcase and cross-promote business content on Amazon.com

Front-end: React, Next.js, NodeJS, express **Back-end**: Java, Google Guice, Apollo GraphQL, Sentry
Infrastructure: CI/CD pipeline, AWS CDK, VPC, NLB, ALB, Fargate, Docker, CDN, S3, CloudWatch, Route 53, X-Ray

- **Designed** front-end tenant isolation and **led** the development -
  - Decomposed a shared, single resource multi-tenant application into components, allowing tenant teams to develop and deploy independently with their own pipelines, avoiding noisy neighbor issues
  - Isolated tenants' traffic, pipelines, runtime bugs, and runtime resources
  - Created release notes, onboarding guide, and hosted working sessions to ease onboard experiences
- **Designed** and **implemented** routing for tenant isolation -
  - Added an Application Load Balancer (ALB) routing layer to direct traffic to intended tenant
  - Introduced an interface of Redirect Service at GraphQL Controller level to be implemented by tenant
- Upgraded a **5-month** outdated proxy service to latest risk-free framework via multiple **CMs**: 1) merged in latest dependencies, 2) migrated **OS** from AL2012 to AL2, and 3) migrated off from the old framework
- Reduced AWS **OpEx Cost** by **50%** in total: 1) optimized non-prod Fargate task size and count, 2) cleaned up unused stacks and pipelines, 3) updated ECR lifecycle policy, and 4) resolved onebox task count bug in Prod
- Takes charge of Q4 peak readiness as **Point of Contact** for the platform. Set up TPS generator and performed load testing during various gameday events.

WALTER P MOORE Washington DC
Software Engineer – Business Intelligence Feb. 2018 – Feb. 2021

Develop digital workflows and tools to expedite project delivery process by automating engineering tasks, reducing repetitive work, improving productivity and efficiency of the entire company.

Steel Connection Design Automation (Major programming language: **python**)
Reduced connection design project timeline by **40%**. The project consists of 3 major phases:

A) Data Extraction: Developed add-ons for Autodesk Apps using python and pyRevit to extract user-specified data into .csv files and perform version comparison, which save **30%** of manual efforts.

B) Bucketing: Designed rules to bucket joints into certified steel connection categories. Improved algorithm using **k-d tree** data structure and **nearest neighbor searching**, reducing runtime by **70%**.

C) Design Automation: Implemented service which automates the connection design process and optimizes based on the real-time configuration, reducing **90%** of design efforts.

RESEARCH AND PUBLICATIONS

RAILTEC (Rail Transportation and Engineering Center) UIUC, IL
Academic Researcher – Finite Element Simulation June 2014 – Sep. 2017

Led a project team of 5 to research eliminating fatigue cracks within bolted rail joints by establishing a parametric study of static and dynamic finite element simulations and fatigue analysis, thus improve railroad safety.
Published 3 journal articles and 2 conference proceedings. Made presentations at multiple conferences.

- 2017 Transportation Research Record. Vol. 2607, pp. 33-42 1ST author doi.org/10.3141/2607-06
- 2016 Joint Rail Conference. Paper No. JRC2016-5802 1ST author doi.org/10.1115/JRC2016-5802
- 2016 Transportation Research Record. Vol. 2545, pp. 36-45 1ST author doi.org/10.3141/2545-05