KAIJUN ZHU © kaijunz.com

kaijun.zhu0629@gmail.com | 788 110th Ave NE, APT N2103, Bellevue, WA 98004 | +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: • Java • AWS • TypeScript • python • React • NodeJS • SQL • MongoDB • Git
Technical Skills: • Algorithms • Data Structures • System Design • Object-Oriented Programming

PROFESSIONAL EXPERIENCE

AMAZON Bellevue, WA
*Software Development Engineer **II** – Fullstack* May 2021 – Present

Project **Monera** – Multi-tenant Retail Web **Platform** for promoting business content across Amazon.com

Front-end: TypeScript, React, Next.js, NodeJS **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

Tenant Isolation Design and Implementation

Implemented a comprehensive tenant isolation strategy, optimizing performance and security across the platform. Effectively mitigated noisy neighbor concerns by isolating traffic, pipelines, and resources. Streamlined onboarding self-service for customized integration, elevating user experience through:

- *Package Dependency Inversion* – Implemented dependency inversion by setting tenant package as entry point, ensuring modular customization and integration while avoiding application size growth, utilizing **Google Guice** and **React Context**
- *Infrastructure Separation* – Leveraged AWS **CDK** for streamlined deployment of pipelines and stacks, empowering tenants to customize infrastructure through **construct** packages, promoting adaptability and flexibility
- *Routing* – Implemented an **ALB** routing layer for targeted traffic direction under tenant-specific matching rules, while establishing a Redirect Service interface at the **GraphQL** Controller level for custom redirection strategies
- *Onboarding Self-Service* – Automated tenant onboarding process, encompassing pipeline creation, stack deployment, and package creation, enabling customization at the onboarding stage while significantly reducing time and effort from weeks of work to within 1-day.

Platform Upgrades and Migrations (DMA Compliance, JDK17 Upgrade)

- Led multiple platform-wide upgrades and migrations. Absorbing majority of required changes in platform core packages and infrastructures to help minimize tenants' efforts. Drove coordination with all tenants.

Platform Readiness Leadership

- Served as the **Point of Contact** for Q4 peak readiness, conducting **load testing** during various gameday events
- Decreased AWS **OpEx** costs by 70% through right-sizing Fargate instances, optimizing task counts, updating ECR lifecycle policies, cleaning up unused resources

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

Developed automated workflows for engineering tasks, improving company-wide productivity and efficiency. Led **Steel Connection Design Automation** to reduce project timeline by 40% through:

- *Data Extraction* – Created Autodesk add-ons using pyRevit to extract data, saving 80% manual efforts
- *Bucketing* – Boosted joint categorization with **k-d tree** and **nearest neighbor search**, reducing runtime by 70%
- *Design Automation* – Realized service to optimize real-time connection design, reducing design efforts by 90%

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.

- 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