

Kevin Chen

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EDUCATION

University of Illinois Urbana-Champaign <i>Master of Computer Science (Online)</i>	GPA: 4.0 <i>May 2024 - Present</i>
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University of Illinois Urbana-Champaign <i>Bachelor of Science, Computer Science + Linguistics</i>	GPA: 4.0 <i>August 2020 - May 2023</i>
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- **Activities:** Computer Systems course assistant, Software Design Studio course assistant, ETRL computer vision research assistant, Leetcode @ UIUC student organization president
- **Awards:** UIUC Bronze Tablet (Top 3%) Graduate, Dean's List, 2023 Outstanding Undergraduate Student

EXPERIENCE

Amazon <i>Software Development Engineer</i>	Seattle, WA <i>April 2024 - Present</i>
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- Designed and led the migration of Kindle Search service (30M Monthly Users) to **AWS ECS**, introducing a **GraphQL gateway** and **asynchronous Kotlin-based service orchestration** to improve scalability and reduce service coupling, while **reducing infrastructure cost by ~20%**
- Wrote design and productionized **LLM-powered natural language search** using **AWS Bedrock (Anthropic Claude)**, implementing intent classification, suggestion prompt templating and fallback logic
- Owned development of the **Interactive Refinement Bar** and Android filter architecture, driving **+540 TPS filter usage** and **+87K additional subscription borrows/month (~\$794K annualized impact)**
- Led migration of Kindle Search Android UI to **Jetpack Compose**, reducing **UI codebase by 54%**, improving accessibility compliance and establishing reusable UI patterns across the organization
- Contributed to **Kindle Search service modernization**, implemented notification service migration, resolved **20+ accessibility issues**, mentored new hires and completed **500+ code reviews across 8 services**
- Team POC for metrics and alarms, implemented 200+ marketplace-level operational alarms and dashboards

<i>Software Development Engineer Intern</i>	<i>May 2023 - July 2023</i>
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- Implemented the Kindle Search mobile UI using **ReactJS**, contributing to cross-platform UI modernization

<i>Software Development Engineer Intern</i>	<i>May 2022 - August 2022</i>
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- Designed and implemented a data pipeline using **DynamoDB, EventBridge, SQS, S3 and Lambda** to ingest customer search metrics and generate daily keyword trend reports

PUBLICATIONS

Heterogeneous-Resource-Aware Federated Learning with Intelligent LoRA Allocation and Aggregation

- Published at IEEE International Symposium on Cluster, Cloud, and Internet Computing (CCGRID) 2026
- Proposed **HRALoRA**, a federated learning system that adapts model fine-tuning to heterogeneous client memory and bandwidth constraints, **reducing communication cost by ~50%** while improving accuracy across distributed training benchmarks.

SKILLS

Programming Languages: Java, Kotlin, C++, Python, TypeScript, SQL

Distributed Systems & Backend: AWS (ECS, DynamoDB, SQS, EventBridge, CloudWatch, CloudFormation)

GraphQL, Spring, Kotlin Coroutines

ML: AWS Bedrock, PyTorch, TensorFlow, NumPy, Pandas, OpenCV

Mobile: Jetpack Compose, React Native

Other Tools: Docker, Git, Linux, Gradle, Maven, CI/CD, JUnit, Mockito, MockK