


Branden KIM

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OBJECTIVE: Senior Software Engineer with 5 years of experience, pursuing a masters degree in ML part-time seeking opportunities to develop data pipelines for ML infrastructure.

WORK EXPERIENCE

SONOS

Senior Software Engineer **Oct 2023 - Feb 2025**

- Led development of a global build and release pipeline delivering firmware to 50M+ devices.
 - Reduced release time by 80% by optimizing pipeline stages and storage.
- Architected a distributed Update Server that aggregates update information from products and delivers firmware updates to 50 million products worldwide, reducing costs from \$700,000 to \$10,000.
 - Built Redis caching and CDN edge-layer to handle 88% of traffic, improving latency by 300%.
 - Deployed via Kubernetes with high availability and blue-green CI/CD using GitHub Actions + Jenkins.
 - Built data streaming pipeline with S3, Kinesis, and RDS to store 3M users and 50M product data.
- Created a functional, strongly-typed, end-to-end data pipeline enabling declarative virtual transaction chains and centralizing all developer and release firmware build metadata.
 - Reduced firmware build-to-release cycle from 6h to 2h.
 - Built type-safe framework for declarative SQL composition with atomic transactions.
- Developed a Scala-based CI/CD pipeline framework automating firmware promotion (Alpha → Prod).
 - Virtualized Jenkins jobs, cutting plugin-related bugs by 72%.

Software Engineer **Aug 2020 - Oct 2023**

- Built a fullstack microservices app with AWS Lambda, Step Functions, S3, and Serverless for internal CRUD operations on users, products, and updates.
 - Built using custom MapReduce with Step Functions + S3 and enabled batch user updates.
- Built internal observability stack (Prometheus + Loki) aggregating Jenkins metrics, improving test reliability by 12%.
- Automated firmware delivery workflows with Python scripts and Jenkins job optimizations.

TECHNICAL PROJECTS

- **scwab** → Built a compiler for a C-style language (wabbit) using Scala and functional programming design.
- **Transformer-Based Electronic Sub-Genre Classifier** → Built custom Transformer model for electronic subgenre classification using BERT + Fourier transforms.
- **Java Raytracer** → Developed 3D raytracer using Java + Processing: ray generation, BVH, Phong shading, geometry collisions.

EDUCATION

M.S Computer Science ML Specialization , Georgia Institute of Technology	2021 - Present
B.S Computer Science <i>Summa Cum Laude</i> , University of Virginia	2016 - 2020
Bradfield School of Computer Science , Certification of Completion	2022 - 2023

SKILLS

Languages: Python, TypeScript, JavaScript, Java, Scala, Go, C
Infra/DevOps: Docker, Kubernetes, Terraform, Jenkins, GitHub Actions
Cloud: AWS (Lambda, Step Functions, S3, Kinesis, RDS), Serverless
Databases: Postgres, Redis
ML Tools: PyTorch, NumPy, Pandas