Michael Yue

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Team leader and backend engineer with 5+ years of experience, ex-Harvard AB/SM.

Experience

Amazon New York, NY

Software Development Engineer II – Fashion Innovation, GenAI Media   **December 2021 – present**

- Architected and **led 4 cross-functional teams** to build Amazon's product image experimentation platform spanning the company's backend image ranking infrastructure and product page frontend, automating A/B testing for **10M+ products worldwide** and generating **$800M+ in revenue**.
- Designed and led implementation of an internal **AI agentic tool** using AWS (Bedrock visual language models, SageMaker Ground Truth, Redshift, Kinesis, Step Functions, ECS Fargate, Lambda, SQS, S3) and custom data tables/ETL pipelines to perform on-demand product catalog analysis at a scale of **1M+ products** per request.
- Engineered a **fault-tolerant, event-driven service** with AWS Step Functions, SQS, ECS Fargate, and DynamoDB to create **10K+ AI-generated product videos** increasing sales by $15M, **orchestrating 4 SageMaker machine learning models** and a custom renderer in load-aware scheduling and task execution workflows.
- **Led engineers across 3 teams** in the full-stack design and implementation of an LLM-based feature generating customer review summaries to enhance size recommendations across **1M+ products**, reducing return rates by 15%.
- Designed and implemented publishing pipelines and frontend modules variously leveraging AWS (Lambda, SQS, Glue, S3, RDS, DynamoDB), Spark SQL, PostgreSQL, GraphQL, Python, Java, JavaScript, and HTML/CSS to deliver **500K+ generated images** at an average of **350 TPS** to Amazon product pages.
- Designed and implemented a feature (Java backend, JavaScript/HTML frontend) that expanded the reach of a frontend widget for custom-sized clothing to **10M+ customers**, driving alignment across **5 product and tech teams** and scaling up 6 backend services to support a **10x increase in peak traffic**.
- Served as **tech lead on a team of 8 engineers**, representing the team in organization-wide roadmap and OE meetings. Mentored 3 interns and 4 junior engineers, with 2 promoted under guidance.
- Led operational excellence (OE) initiatives across **4 teams**, including organization-wide migrations and a **multi-month deprecation effort across the codebases of 8 teams**.

Software Development Engineer I – Fashion Innovation   **August 2020 – December 2021**

- Designed and led end-to-end development (React, Java, AWS Lambda, SNS/SQS, and DynamoDB) of a service with **1M+ monthly active users** that visualized 5M+ fashion products on digital avatars, heading coordination efforts between 4 teams.
- Used Java, React and AWS services (DynamoDB, Lambda, SNS/SQS) to build and scale a service enabling customers to visualize and purchase custom-sized clothing, involving the creation of **5 microservices**.

Capital One New York, NY

Software Engineering Intern   **June 2019 – August 2019**

- Developed an internal tool in Scala to manage access controls for datasets in the enterprise central data lake, storing permission metadata in AWS databases.
- Employed Jenkins, Kubernetes, and Docker to continuously deploy constituent APIs to production.

Education

Harvard University   **August 2016 – May 2020**

Master's (S.M.) in Applied Mathematics – focus in Scientific Computing, Machine Learning

Bachelor's (A.B.) in Computer Science with Honors, Minor in Physics

Overall GPA: 3.99 | Detur Book Prize

Skills and Tools

Languages: Java, Python, JavaScript/TypeScript, SQL, HTML/CSS, Kotlin, Scala

Cloud, Tools, and Frameworks: AWS (various services), React, GraphQL, PostgreSQL, Spark, Docker, Kubernetes, Jenkins