

HongKun Tian

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SUMMARY

Software Development Engineer with 4+ years of experience building distributed systems at Amazon Web Services. Worked on AWS Step Functions, a serverless workflow orchestration platform, delivering customer-facing APIs, workflow language features, infrastructure-as-code integrations, and cloud region launches.

EXPERIENCE

Amazon Web Services (AWS)

Software Development Engineer II, AWS Step Functions

Jul 2022 – Present

- Implemented core backend functionality for state machine versioning and aliases in AWS Step Functions, a feature enabling developers to publish immutable workflow versions and safely route production traffic.
- Implemented validation logic enabling support for JSONata, a query and transformation language in Step Functions workflows, preventing invalid runtime references and improving developer diagnostics.
- Diagnosed and resolved complex deployment automation failures during new AWS region launches, coordinating across infrastructure dependencies to improve reliability of Step Functions rollouts across newly deployed and restricted cloud regions.
- Helped launch the ValidateStateMachineDefinition API, enabling developers to validate workflow definitions prior to deployment by implementing throttling, monitoring canaries, and rollout infrastructure for global release.
- Implemented CloudFormation resource provider functionality enabling infrastructure-as-code management of Step Functions resources, including lifecycle handlers and automated integration tests.
- Built monitoring checks and operational tooling used by on-call engineers to detect workflow regressions and safely perform batch updates to production configuration.
- Built LLM-powered agent workflows with tool-calling capabilities, integrated with Slack and development environments to automate ticket triage, pipeline health reporting, and operational workflows.

Software Development Engineer Intern, AWS Step Functions

May 2021 – Aug 2021

- Developed reusable React components used in AWS Step Functions console integrations.
- Implemented workflow visualization capabilities inside the AWS Batch console and built integration tests validating cross-service console functionality.

Ericsson

Software Developer Intern

Jan 2021 – Apr 2021

- Developed automation scripts using Bash and Groovy to orchestrate deployment workflows through Jenkins pipelines across VMware and OpenStack environments.

UMAknow

Software Developer Intern

May 2020 – Aug 2020

- Redesigned the Cloudockit web app login page and implemented responsive UI (generate.cloudockit.com).
- Built diagram generation functionality for dynamically producing cloud infrastructure diagrams.

Software Developer Intern

Jun 2019 – Aug 2019

- Developed a server-side REST API for Cloudockit to trigger cloud documentation generation.
- Built an interactive web interface for visualizing and testing API endpoints.
- Developed automated acceptance tests for validating generated documentation templates.

EDUCATION

McGill University

Montreal, Canada

Bachelor of Science, Honours Computer Science

Sep 2018 – May 2022

GPA: 4.00 / 4.00; Alan Shaver Scholarship for academic excellence.

SKILLS

- **Languages:** Java, Python, TypeScript, JavaScript, C/C++, Bash, SQL
- **Infrastructure:** AWS, Step Functions, CloudFormation, CDK, DynamoDB, CloudWatch, EventBridge
- **Systems:** Distributed systems, backend services, CI/CD infrastructure, infrastructure automation, service reliability
- **Developer Tooling:** API design, integration testing, observability, production debugging
- **AI / Tooling:** LLM-based automation, agent workflows, tool-calling systems
- **Languages Spoken:** English, French, Chinese Mandarin