

Karthik Subramanian

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[LINKEDIN](#) | [PORTFOLIO](#) | [GITHUB](#) | [DEV.TO](#)

SUMMARY

I am a data-driven and results-oriented Engineering Leader with **14+ years** of experience architecting and delivering complex, large-scale **data platforms and AI-driven** applications. I have a proven track record of spearheading technical strategy and optimizing cloud infrastructure to achieve over **\$500K** in annualized operational cost savings. I'm experienced in building, mentoring, and scaling high-performing engineering teams to accelerate product delivery and foster a culture of continuous innovation and operational excellence.

CORE COMPETENCIES

Leadership & Strategy	Project Management	Technical Architecture	Software Development
Technical Roadmapping & Vision	Agile/Scrum Methodologies	Cloud Architecture (AWS)	Languages: Java, Python, TypeScript
Budget & Cost Optimization	Stakeholder Management	Event-Driven & Real-Time Systems	Frameworks: SpringBoot, Django, React, Angular
Business Impact Analysis	Hiring & Talent Development	Serverless & Microservices	Databases: PostgreSQL, MySQL, Snowflake, DynamoDB, ElasticSearch
Process Improvement & Innovation	Cross-Functional Team Leadership	GenAI Applications	ETL: Apache Flink, Kinesis, Lambda, Step Functions

KEY ACCOMPLISHMENTS

- Spearheaded the data engineering strategy for a flagship greenfield literacy platform, leading two cross-functional teams (**10+ engineers**) in Assessments & Personalization and Dashboards to deliver foundational data infrastructure from the ground up.
- By championing the adoption of AI into development workflows, built the division's **first GenAI** application leveraging **AWS Bedrock, Lambda, Step Functions, and Neptune DB**, creating a pivotal tool that enabled ontologists to construct a comprehensive knowledge graph and directly impact future content personalization capabilities.
- Eliminated a costly dependency on external vendors by delivering a **GenAI-powered** tool for internal editors, achieving **\$150,000** in annual cost savings on quiz generation.
- Slashed the innovation lifecycle from months to just 2 weeks by pioneering a **rapid prototyping framework** using **agentic AI**, enabling product teams to move from idea to user testing at a fraction of the previous cost.
- Confronted with a slow, 3-4 month manual onboarding process, architected and delivered an automated data framework using **Kinesis, Lambda & Caliper Event Standards** that reduced new product integration time by over **80%**, dramatically accelerating the organization's ability to launch and iterate on new offerings.
- Drove **\$140,000** in direct annual cost savings by orchestrating a comprehensive **AWS** infrastructure optimization initiative, identifying and rightsizing resources to control rising cloud costs.

- In response to the need for safer and faster release cycles, drove the adoption of a **feature management** platform (LaunchDarkly), establishing best practices that empowered **data-driven A/B testing** and minimized deployment risk across engineering.
- Strengthened team capabilities and addressed critical skill gaps by revamping the engineering **hiring and onboarding process**, successfully recruiting and integrating multiple key engineers.
- Directly contributed to improved learning outcomes by implementing a **K-Means clustering** algorithm, which provided teachers with actionable, data-driven student groupings for more effective instruction.
- Achieved over **\$360,000** in annualized recurring savings by directing the on-time and under-budget migration of single tenant data warehouse to a multi tenant data model in **Snowflake**, resolving critical operational cost and scalability limitations.

PROFESSIONAL EXPERIENCE

SCHOLASTIC INC. SENIOR SOFTWARE ENGINEERING MANAGER	OCT 2022 - PRESENT
RENAISSANCE LEARNING TECHNICAL LEAD	MAR 2022 – OCT 2022
SCHOLASTIC INC SENIOR SOFTWARE ENGINEER CONSULTANT	APR 2018 – MAR 2022
VIACOM INC TECHNICAL LEAD CONSULTANT	JUN 2011 – APR 2018

INNOVATION PROJECTS & PUBLICATIONS

GenAI Applications: Developed a serverless [Trivia Snake](#) game using AWS Bedrock for question generation and prototyped a [real-time AI tutoring assistant](#).

[GAME LINK](#)

Data & Cloud Engineering: Created a public [YouTube](#) series on stream/batch processing with Kinesis and Flink; published a [guide](#) to building serverless applications with AWS SAM.

Thought Leadership: Authored multiple articles on Dev.to covering [Rapid Prototyping](#) with Agentic AI, [Serverless Architectures](#), and other technical topics.

EDUCATION, CERTIFICATIONS & MEMBERSHIPS

BACHELOR OF ENGINEERING, INFORMATION TECHNOLOGY UNIVERSITY OF MUMBAI	2011
AWS CERTIFIED CLOUD PRACTITIONER	2022
AWS COMMUNITY BUILDERS	2025