

DR. POUYA ATAEI

Senior Backend Engineer | Platform & Security | PhD in Distributed Systems

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polyhistor

Pouya-Ataei



💡 What I Have to Offer

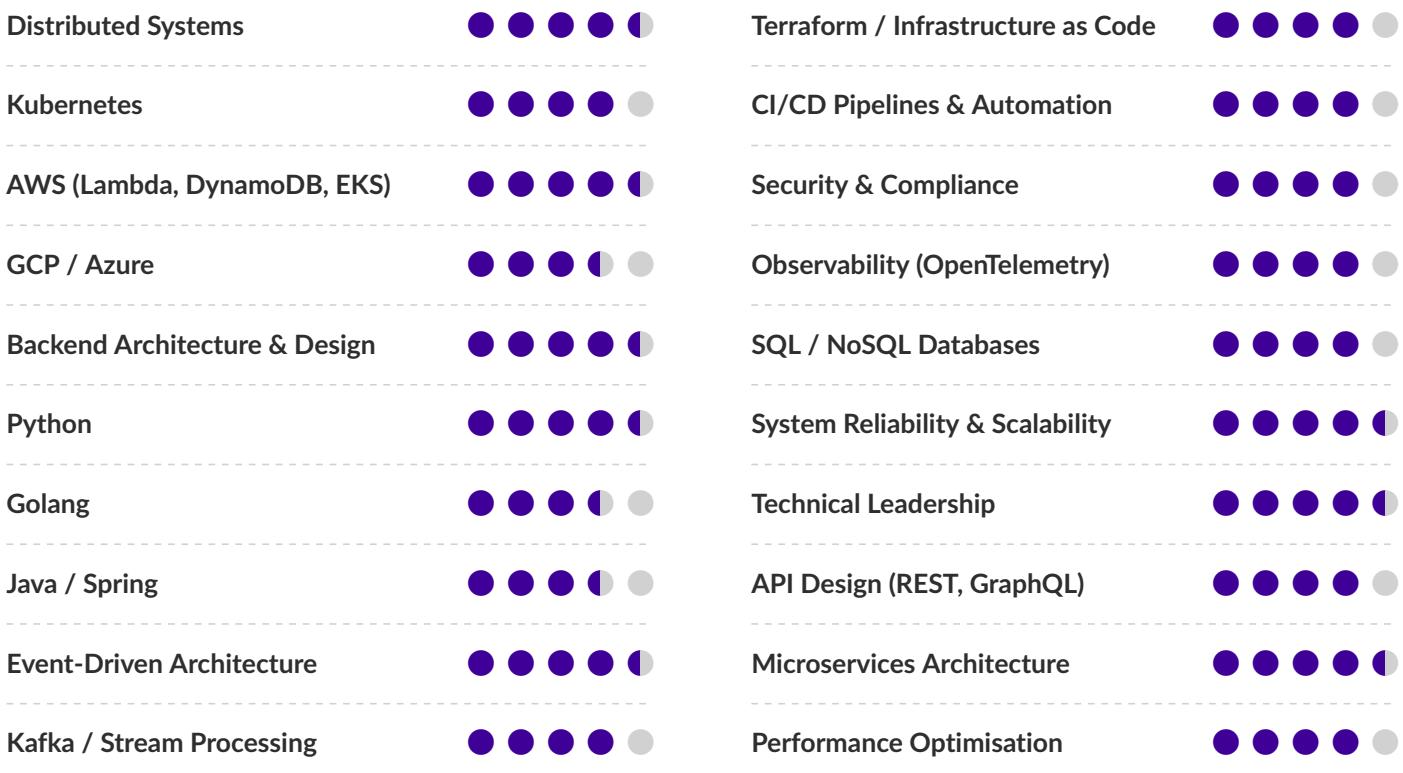
I am a hands-on backend engineer and technical leader with 10+ years building and operating **high-scale platform services** for enterprise organisations. My expertise spans **cloud-native architectures** (Kubernetes, AWS, GCP, Azure), **distributed systems**, and **security-focused infrastructure** that powers mission-critical products.

With a **PhD in Big Data** and deep experience in **event-driven architectures**, I bring a profound engineering mindset to platform development. I excel at driving technical direction, coaching engineers, and establishing engineering excellence across teams. I'm passionate about **reducing operational burden**, improving system health, and building cloud-agnostic solutions that scale.

💼 What I'm Looking For

- Hands-on backend engineering with high-scale platform services and security infrastructure.
- Opportunity to drive technical vision, architecture decisions, and engineering best practices.
- Collaborative environment where I can coach engineers and promote healthy engineering culture.

🔗 Technical Expertise



💼 Relevant Experience

Principal Data Engineer at Vector Limited
Auckland, New Zealand

May 2025 – Current

- Architect and operate high-scale platform services processing 2 billion daily data intervals from 2.7 million smart meters—critical infrastructure for New Zealand's energy grid.
- Design serverless backend architectures on AWS (Lambda, DynamoDB, S3, Glue, Athena) with focus on **security, reliability, and performance** at scale.
- Implement event-driven systems for real-time data processing with automated validation, lineage tracking, and compliance monitoring.
- Drive operational excellence through CI/CD automation, observability, and proactive system health monitoring.
- Establish security standards and data governance practices ensuring regulatory compliance.
- Mentor junior engineers, fostering engineering culture and driving continuous improvement.

Key Technologies: AWS (Lambda, DynamoDB, S3), Python, Event-Driven Architecture, CI/CD, Security & Compliance

Engineering Manager & Principal Architect at Invenco by GVR

 Sep 2024 – May 2025

Auckland, New Zealand

- Led technical direction for 'Engage' platform—high-throughput distributed system serving 8 out of 10 petrol stations across the USA with stringent security requirements.
- Managed 35 engineers across 4 teams as sole principal architect, driving architecture decisions and engineering best practices.
- Designed cloud-native backend services using Kubernetes, Kafka, and AWS EventBridge for real-time processing at scale.
- Architected advanced observability solutions using OpenTelemetry for anomaly detection, system health monitoring, and operational maturity.
- Implemented security-focused architecture with Clean Architecture, Domain-Driven Design, and comprehensive coding standards.
- Drove tech debt reduction initiatives, improving feature velocity and system reliability.
- Coached and developed engineers at all levels, promoting healthy engineering team culture.

Key Technologies: AWS, Kubernetes, Kafka, OpenTelemetry, Terraform, Go, Node.js, Python, Snowflake

Lead Development Architect at Idexx Laboratories

 Sep 2021 – July 2024

Auckland, New Zealand

- Served as company-wide lead architect, driving critical technical decisions across multiple regions and coordinating engineering teams.
- Architected event-driven distributed systems using Kafka, deploying and testing archetypes with Confluent consultants.
- Influenced leadership team on technical vision, proposing solutions for future scalability and security needs.
- Created scientific methodology for software delivery with data-driven approaches to architecture decisions.
- Designed infrastructure, applications, and integrations across AWS with Terraform for Infrastructure as Code.
- Drove engineering excellence through thoughtful code review, best practices documentation, and hands-on coaching.
- Engaged with Databricks, Confluent, AWS, and other vendors to evaluate and implement platform solutions.

Key Technologies: AWS, Kafka, Terraform, Kubernetes, Go, Elasticsearch, TOGAF, Domain-Driven Design

Tech Lead at Idexx Laboratories

 Jun 2021 – Sep 2021

Auckland, New Zealand

- Designed and deployed distributed data layer with declarative, client-driven APIs for high-performance service integration.
- Engineered event-driven architecture prototypes with Kafka in collaboration with Confluent consultants.
- Drove technical decisions and unblocked teams on complex implementation challenges.

Key Technologies: Kafka, AWS, Terraform, Go, Python, Kubernetes, GraphQL

Senior Fullstack Developer / Tech Lead at ezyVet

 Jul 2020 – Jun 2021

Auckland, New Zealand

- Elevated to **Tech Lead**, taking comprehensive responsibility for platform engineering and backend services.
- Reduced operational burden by optimizing deployment pipeline—cutting build times from 45 to 8 minutes.
- Drove automation initiatives for CI/CD, testing, and infrastructure provisioning.
- Mentored new hires, playing pivotal role in recruitment, onboarding, and team development.

Key Technologies: React, TypeScript, AWS, Kubernetes, Terraform, Go, PHP

Fullstack Developer at Infosys (deployed to Vodafone)

Auckland, New Zealand

Feb 2020 – Jul 2020

- Built customer-facing e-commerce services with robust operational focus on service health and performance.
- Developed integration and anti-corruption layers for legacy Oracle systems.
- Collaborated with diverse stakeholders on feature development and incident resolution.

Key Technologies: React, Python, Flask, AWS, DynamoDB, Java

Founder & Lead Engineer at Pouyaraveshan Academy

Tehran, Iran

Feb 2017 – June 2019

- Founded and led technology education organisation, demonstrating entrepreneurial and leadership capabilities.
- Built scalable backend platforms including LMS, analytics, and payment integration systems.
- Conducted workshops on Python, cloud technologies, and software engineering.

🎓 Education

PhD in Computer Science (Big Data / Distributed Systems)	Auckland University of Technology	Feb 2019 – Sep 2024
M.Sc in Software Engineering	Staffordshire University	Sep 2015 – Feb 2017
B.Sc in Software Engineering (Dual)	Staffordshire / APU	Jan 2012 – April 2015
Nano Degree in Data Architecture	Udacity	Dec 2022 – Feb 2023

🌟 Certifications

Data Streaming Engineer	Confluent	December 2025
MCPS: Microsoft Certified Professional	Microsoft	October 2015
PyResearcher (Python, MongoDB, NumPy, Pandas)	Pycademy	April 2015

⚗️ Publications & Thought Leadership

📘 Books

- *The nexus methodology: A trenchant approach toward big data.* (2017).

📄 Journal Articles

- Terramycelium: A reference architecture for adaptive big data systems. (2025). *Journal of Big Data*.
- Cybermycelium: A reference architecture for domain-driven distributed big data systems. (2024). *Frontiers in Big Data*.
- Impact of big data analytics on business performance: A systematic literature review. (2024).
- Filtering useful app reviews using naive bayes—which naive bayes? (2024). *AI*.
- Ethics of software programming with generative ai: Is programming without generative ai always radical? (2024). *arXiv preprint arXiv:2408.10554*.

- Application of microservices patterns to big data systems. (2023). *Journal of Big Data*.
 - The state of big data reference architectures: A systematic literature review. (2022). *IEEE Access*.
 - The hype of emerging technologies: Big data as a service. (2017). *Int. J. Control Theory Appl.*
 - Security and privacy challenges in big data era. (2016). *International Journal of Control Theory and Applications*.
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Conference Proceedings

- Why Big Data Projects Fail? A Systematic Literature Review. (2024).
- An Overview on Testing Big Data Applications. (2024), In *Proceedings of ninth international congress on information and communication technology*.
- Towards a domain-driven distributed reference architecture for big data systems. (2023), In *Amcis 2023*.
- NeoMycelia: A software reference architecturefor big data systems. (2021, December), In *2021 28th asia-pacific software engineering conference (apsec)*.
- Big Data Reference Architectures: A Systematic Literature Review. (2020), In *2020 31st australasian conference on information systems (acis)*. IEEE.
- Evaluating Major Issues Regarding Reliability Management for Cloud-based Applications. (2017a).
- The big data ecosystem and its environs. (2017b).

Community & Industry Engagement

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| • IEEE Computer Society – Academic Contributor | Jan 2021 - Present |
| • Association for Information Systems (AIS) – Academic Contributor | May 2019 - Present |
| • Confluent Kafka Meetup – Speaker, Auckland | 2023 |
| • Geekle Global Conferences – Speaker, Multiple Events | 2021-2023 |

Selected Presentations

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| • American Conference on Information Systems (AMCIS), USA | 2020, 2024 |
| • Asia-Pacific Software Engineering Conference (APSEC), Taiwan | 2021 |
| • Australasian Conference on Information Systems (ACIS), NZ | 2019 |
| • Kafka and Terraform Meetup - Confluent, New Zealand | 2023 |