DR. POUYA ATAEI

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

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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

Distributed Systems	●●●●◐	Terraform / Infrastructure as Code	●●●●○
Kubernetes	●●●●○	CI/CD Pipelines & Automation	●●●●○
AWS (Lambda, DynamoDB, EKS)	●●●●◐	Security & Compliance	●●●●○
GCP / Azure	●●●◐○	Observability (OpenTelemetry)	●●●●○
Backend Architecture & Design	●●●●◐	SQL / NoSQL Databases	●●●●○
Python	●●●●◐	System Reliability & Scalability	●●●●◐
Golang	●●●◐○	Technical Leadership	●●●●◐
Java / Spring	●●●◐○	API Design (REST, GraphQL)	●●●●○
Event-Driven Architecture	●●●●◐	Microservices Architecture	●●●●◐
Kafka / Stream Processing	●●●●○	Performance Optimisation	●●●●○

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

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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

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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

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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)

Feb 2020 – Jul 2020

Auckland, New Zealand

- 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

Feb 2017 – June 2019

Tehran, Iran

- **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

B.S.C in Software Engineering (Dual Degree)	Staffordshire University	Jan 2012 – April 2015
B.S.C in Software Engineering (Dual Degree)	Asia Pacific University of Technology	Jan 2012 – April 2015
M.S.C in Software Engineering	Staffordshire University	September 2015 – Feb 2017
P.H.D in Computer Science	Auckland University of Technology	Feb 2019 – September 2024
Nano Degree in Data Architecture	Udacity	Dec 2022 – Feb 2023

Certificates

PyResearcher - Sixty Hours (Python - MongoDB - NumPy - Matplotlib - Pandas)	Pycademy	April 2015
MCPS: Microsoft Certified Professional	Microsoft	October 2015
MS: Programming in HTML5 with JavaScript and CSS3	Microsoft	October 2015
Data Streaming Engineer	Confluent	December 2025

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*.

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

- **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

- 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