DR. POUYA ATAEI

Head of Data Engineering & Platforms | PhD in Big Data | 12+ Years Experience

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What I Have to Offer

I am a senior technical leader with 12+ years building and scaling **large-scale data engineering and platform functions**. My expertise spans **AWS, Snowflake**, and modern data engineering tools, with proven experience leading **cloud migration strategies** from on-premise SQL environments to cloud-first architectures.

With a **PhD in Big Data** and hands-on experience processing **high-frequency energy and IoT data at scale**, I bring the strategic mindset needed to balance technical innovation, cost management, and operational reliability. I'm passionate about **building high-performing engineering teams**, championing **automation and engineering craft**, and shaping data ecosystems that enable real-time insights and smarter energy solutions.

What I'm Looking For

- Senior technical authority role shaping the future of data platforms and engineering.
- Opportunity to lead teams balancing operational reliability, engineering excellence, and innovation.
- Mission-driven work that enables a cleaner, more connected energy future through data.

Technical Expertise

AWS (Glue, Athena, Lambda, S3, EKS)	Terraform / Infrastructure as Code
Snowflake	Kubernetes / Docker
Python / SQL	Fivetran / Coalesce / dbt
Data Platform Architecture	Machine Learning / AI
Cloud Migration Strategy	SQL / NoSQL Databases
DevOps / DataOps	Real-Time Analytics
CI/CD & Automation	Team Leadership & Mentoring
Kafka / Event Streaming	Strategic Planning
Big Data Systems	Stakeholder Collaboration
Data Engineering / ETL	Cost Optimisation

Relevant Experience

Principal Data Engineer at Vector Limited

May 2025 – Current

Auckland, New Zealand

- **Serve as senior technical authority** for data platform decisions, architecting cloud-first solutions that process 2 billion daily data intervals from 2.7 million smart meters.
- Design and evolve **AWS-based data ecosystem** (Lambda, Glue, Athena, S3, DynamoDB) enabling real-time insights, advanced analytics, and AI-powered energy solutions.
- Drive development of **serverless data platforms** processing high-frequency energy and IoT data at scale, optimising network performance and supporting decarbonisation initiatives.
- Lead **DataOps practices**—embedding automation, CI/CD, data validation, lineage tracking, and observability into engineering workflows.
- Collaborate with **Data Governance, BI & Analytics, Architecture, and Cyber Security** teams to ensure a robust, compliant, and future-ready data ecosystem.
- Champion a culture where **data is at the heart of every decision**, from edge-to-cloud automation to AI-powered grid management.
- **Mentor junior engineers**, fostering engineering excellence and continuous improvement across the team.

Key Technologies: AWS (Lambda, Glue, Athena, S3, DynamoDB), Python, Serverless, DataOps, CI/CD, Machine Learning

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Engineering Manager & Principal Architect at Invenco by GVR

Sep 2024 – May 2025

Auckland, New Zealand

- **Led Platform Engineering teams**—35 engineers across 4 cross-functional teams—balancing operational reliability, engineering excellence, and innovation.
- Served as **sole principal architect** for the 'Engage' domain, driving all architecture decisions and technical direction for high-throughput distributed systems.
- Designed **cloud-native platforms** using AWS, Kubernetes, Kafka, and Snowflake for data warehousing and analytics workloads.
- Guided **modernisation efforts**, embedding automation, CI/CD, and DevOps best practices across engineering teams.
- Architected **advanced observability solutions** using OpenTelemetry for real-time system health monitoring and operational maturity.
- **Built, mentored, and developed** high-performing engineering teams with a passion for automation and engineering craft.
- **Balanced technical innovation with cost management**—driving efficiency initiatives while maintaining operational reliability.

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

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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 data and platform decisions across multiple regions.
- **Partnered with Databricks, Confluent, AWS, and Snowflake** representatives to evaluate and implement modern data platforms.
- Architected **event-driven distributed systems** using Kafka, deploying and testing archetypes with Confluent consultants.
- Led **strategic initiatives** balancing technical innovation, cost management, and operational reliability.
- **Influenced leadership team** on technical vision, proposing solutions for future scalability and data platform evolution.
- Created **scientific methodology for software delivery** with data-driven approaches to architecture decisions.
- **Coached and mentored** engineers at all levels, driving engineering excellence through thoughtful code review and best practices.

Key Technologies: AWS, Kafka, Databricks, Snowflake, Terraform, Kubernetes, Go, Elasticsearch, TOGAF

Tech Lead at Idexx Laboratories

Jun 2021 – Sep 2021

Auckland, New Zealand

- Designed and deployed **distributed data layer** with declarative, client-driven APIs.
- Engineered **event-driven architecture prototypes** with Kafka in collaboration with Confluent.
- 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.
- **Drove automation initiatives** for CI/CD, testing, and infrastructure provisioning.
- **Reduced operational burden**—cutting build times from 45 to 8 minutes.

- **Mentored new hires**, playing pivotal role in recruitment, onboarding, and team development.

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

Founder & Lead Engineer at Pouyaraveshan Academy

Feb 2017 – June 2019

Tehran, Iran

- **Founded and led** technology education organisation, demonstrating entrepreneurial leadership.
- Built **scalable data-driven 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

Thought Leadership & Publications

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