DR. POUYA ATAEI

Senior Principal Data Engineer | Cloud Data Architect | PhD in Big Data

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What I Have to Offer

I am a data engineering leader with 10+ years building world-class data environments for enterprise organisations. My expertise spans **modern cloud data platforms** (AWS, Azure, GCP), **real-time streaming architectures** (Kafka, EventBridge), and **scalable data foundations** that drive business transformation.

As a **PhD in Big Data** with a passion for **consulting and client engagement**, I excel at partnering with forward-thinking organisations to define data strategies, architect innovative solutions, and deliver multi-phased implementation roadmaps. I bring a **growth-oriented mindset**, strong mentoring capabilities, and genuine enthusiasm for continuous learning.

What I'm Looking For

- Variety, fulfilment, and balance—working with top companies on transformative data solutions.
- Opportunity to contribute thought leadership and shape data engineering practices.
- Collaborative environment where I can mentor teams and help clients derive maximum value from their data.

Technical Expertise

Data Architecture & Strategy	●●●●◐	Event-Driven Architecture	●●●●◐
AWS (Glue, Athena, Lambda, S3)	●●●●◐	Terraform / Infrastructure as Code	●●●●○
Azure (Data Factory, Synapse)	●●●◐○	Kubernetes / Docker	●●●●○
GCP (Dataflow, BigQuery)	●●●◐○	Airflow / dbt / Orchestration	●●●◐○
Snowflake / Databricks	●●●●○	Machine Learning / MLOps	●●●●○
Kafka / Event Streaming	●●●●○	SQL / NoSQL Databases	●●●●○
Python	●●●●◐	DataOps / CI/CD Pipelines	●●●●○
Distributed Processing	●●●●○	Java / Scala	●●●○○
Big Data Systems	●●●●◐	Golang	●●●◐○
Data Engineering / ETL	●●●●◐	Consulting / Client Engagement	●●●●○

Relevant Experience

Principal Data Engineer at Vector Limited

May 2025 – Current

Auckland, New Zealand

- **Architect and deliver innovative cloud data solutions** for New Zealand's largest energy distributor, processing 2 billion daily data

intervals from 2.7 million smart meters.
- Design and implement **serverless data architectures** on AWS (Lambda, Glue, Athena, S3, DynamoDB) enabling real-time and batch analytics at scale.
- Lead development of **event-driven architectures** for continuous data processing, supporting demand forecasting and grid flexibility analytics.
- **Define cloud data strategies** and multi-phased implementation roadmaps for energy analytics platforms.
- Implement **DataOps methodologies**—automated data validation, lineage tracking, observability, and CI/CD pipelines for reliable data delivery.
- **Bridge data science and engineering** by operationalizing ML models for energy forecasting and infrastructure mapping.
- **Mentor junior engineers**, fostering a high-performance, growth-oriented engineering culture.

Key Technologies: AWS (Lambda, Glue, Athena, S3, DynamoDB), Python, Event-Driven Architecture, Machine Learning, DataOps, Serverless

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Engineering Manager & Principal Architect at Invenco by GVR

Sep 2024 – May 2025

Auckland, New Zealand

- **Led data engineering strategy** for 'Engage' platform, a high-throughput distributed system serving 8 out of 10 petrol stations across the USA.
- Managed 35 engineers across 4 teams, serving as **sole principal architect** for all systems and services in the domain.
- Designed **event-driven architectures** using Kafka and AWS EventBridge for real-time data processing at scale.
- Implemented **Snowflake data warehousing** solutions for analytics and reporting workloads.
- Established engineering excellence through **Clean Architecture, Domain-Driven Design**, and comprehensive coding standards.
- Architected **advanced observability solutions** using OpenTelemetry, enhancing system monitoring and performance tracking.
- **Mentored and developed** direct reports and wider project teams, driving continuous improvement.

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

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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 technology decisions across multiple regions.
- **Partnered with Databricks, Confluent, and AWS** representatives to evaluate and implement modern data platforms.
- Architected **event-driven systems using Kafka**, deploying and testing archetypes with Confluent consultants.
- Created **scientific methodology for software delivery**, introducing data-driven approaches to decision-making.
- **Pre-sales and estimation support**: engaged with technology vendors, evaluated solutions, and contributed to project planning.
- **Coached and mentored** engineers at all levels, providing guidance on best practices and fostering continuous learning.
- Designed infrastructure, applications, and integrations across AWS, leveraging Terraform for Infrastructure as Code.

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

Tech Lead at Idexx Laboratories

Jun 2021 – Sep 2021

Auckland, New Zealand

- Designed and deployed a **distributed data layer** with declarative, client-driven APIs.
- Engineered **event-driven architecture** prototypes with Kafka in collaboration with Confluent.
- Presented innovative solutions to cross-functional teams, fostering **thought leadership** and knowledge sharing.

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

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Senior Fullstack Developer / Tech Lead at ezyVet

Jul 2020 – Jun 2021

Auckland, New Zealand

- Elevated to **Tech Lead**, taking comprehensive responsibility for frontend applications and platform engineering.
- Optimized deployment pipeline, **cutting build times from 45 to 8 minutes**, dramatically improving delivery velocity.
- **Mentored new hires**, playing pivotal role in recruitment, onboarding, and team development.

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

Founder & Lead Engineer at Pouyaraveshan Academy

Feb 2017 – June 2019

Tehran, Iran

- **Founded and led** a technology education organisation, demonstrating entrepreneurial initiative.
- Conducted workshops on Python, cloud technologies, and software engineering for diverse audiences.
- Built and scaled **data-driven platforms** including LMS, analytics, and integration systems.

Education

PhD in Computer Science (Big Data)	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

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