

Anmol Manchanda

Cloud Architect & AI Engineer | AWS | Python | Terraform | PGD MSD | BCA

Proficient cloud, data and technical solutions architect specializing in building scalable AWS infrastructure as well as rapid prototyping. Proven ability to solve complex technical challenges across multiple domains using modern tools and cloud infrastructure. Implemented FinOps in infrastructure while processing 500TB+ monthly for UN global initiative through automation, reusability, optimization, and modularization. Experienced in technical and non technical communication, presentation skills, ETL data pipelines, and technical leadership. Extraordinarily quick learner and backed up with excellent references.

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EXPERIENCE

Full Stack Software Engineer

United Nations-Habitat – Quality of Life Initiative

06/2024 - 08/2025

Hybrid (Kitchener)

- Contributed to a \$20M project with projected expansion to \$30–40M annually by 2026/2027. Spearheading global scale-up: 50 cities in 2025, 300+ in 2026, and thousands beyond 2027.
- Led a multidisciplinary data team in designing and deploying a 500TB+ scalable, secure geospatial mobile-ping analytics solution; built dashboards (Pandas, QuickSight) and AWS Glue-based PySpark pipelines. Automated using Event-driven architecture.
- FinOps: Reduced infrastructure costs by 80% (\$10 to \$2 per indicator/city/day) and Improved processing time by 85% from 6 hours to under 1 hour through resource optimization, parallel processing, reusability, and modularization for AWS Glue code.
- Developed rapid prototypes including web apps. Led technical implementation across multiple work streams: documentation, web development, Integration, testing, scrum, and design.

Hyperledger Fabric Architect & Mobile Developer

Region of Waterloo – Smart Waterloo Region Innovation Lab

02/2024 - 06/2024

Hybrid (Kitchener)

- Designed architecture for custom Blockchain network using Hyperledger Fabric architecture and Smart Contracts for municipal applications.
- Built proof-of-concept implementation using Docker containerization for Organizations.
- Wireframed & designed the iOS app in Figma. Developed the iOS app in Xcode using Swift.

PROJECTS

Chatbot & AI Agent using AWS Bedrock with Embedding & Vector DB

- Built intelligent Q&A system using Python, AWS Bedrock, vector embeddings, and PGVector. Using function calling and tool use in AI Agent.

Resource Management System

- Built task management platform with Next.js, React, TypeScript supporting 17 users with real-time updates. LLM-driven. Used Airtable as database.

Personal Website

- LLM-driven and AI Assisted development.
- Effectively used MCPs to optimize token usage and looking up documentation.
- Used MCPs like TaskMaster in conjunction with Sequential thinking for effective planning.

EDUCATION

Python for Beginners

FreeCodeCamp

Post Graduate Diploma in Mobile Solutions Development

Conestoga College

2021 - 2023

Waterloo, CA

Bachelor of Computer Applications

Guru Gobind Singh Indraprastha University

2014 - 2019

New Delhi, IN

TECHNICAL SKILLS

S3 Glue IAM Lambda

Step Functions Event Bridge Athena

CloudWatch QuickSight Route52

VPS Python PySpark Pandas

Terraform JSON Docker

MySQL PostgreSQL CI/CD Git

OpenAI API Figma Postman

N8N.io Cursor.AI Claude Code

MCP Boto3 Bedrock AI Agent

Chatbot RAG Vector DB

Embedding

CERTIFICATIONS

Solutions Architect Associate (Oct-Nov 2025)

Amazon Web Services

Full Stack Software Engineer (2025)

Quality of Life Initiative, UN-Habitat

Android Basics Nanodegree By Google (2017)

Udacity

Android Training With Projects (2016)

iON Tata Consultancy Services

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SUMMARY

Proficient cloud, data and technical solutions architect specializing in building scalable AWS infrastructure as well as rapid prototyping. Proven ability to solve complex technical challenges across multiple domains using modern tools and cloud infrastructure. Reduced infrastructure costs by 80% while processing 500TB+ monthly for UN global initiative through automation, reusability, optimization, and modularization. Experienced in technical and non technical communication, presentation skills, AWS services, ETL optimization, and technical leadership. Extraordinarily quick learner and backed up with excellent references.

CERTIFICATIONS

Solutions Architect Associate – Amazon Web Services	Oct – Nov 2025
Full Stack Software Engineer – Quality of Life Initiative, UN-Habitat	2025
Android Basics Nanodegree By Google – Udacity	2017
Android Training With Projects – iON Tata Consultancy Services	2016

SPECIALITIES

Cloud, Automation, Design, Team Lead, Project Lead & Execution, Executive Presentation, Building Proof-of-Concepts, Systems Support, Process Analysis & Improvement.

EXPERIENCE

United Nations-Habitat – Quality of Life Initiative

Full Stack Software Engineer

Hybrid (Kitchener)
June 2024 – Aug 2025

- Contributed to a **\$20M** project with projected expansion to **\$30–40M** annually by **2026/2027**.
- Spearheading global scale-up: **50 cities** in 2025, **300+** in **2026**, and **thousands** beyond **2027**.
- Cloud Architect & Data Engineer: 32.5%**
 - Led a multidisciplinary data team in designing and deploying a **500TB+ scalable, secure geospatial mobile-ping analytics solution**; built **dashboards (Pandas, QuickSight)** and AWS **Glue**–based **PySpark** pipelines.
 - FinOps: **Reduced** infrastructure **costs** by **80%** (**\$10 to \$2** per indicator/city/day) and **Improved** processing **time** by **85%** from **6 hours** to under **1 hour** through resource optimization, parallel processing, reusability, and modularization for AWS Glue code.
 - Designed and deployed automated and scalable AWS infrastructure processing 500TB+ monthly using AWS Glue and PySpark.
 - Security: Implemented least-privilege IAM policies, users & roles through AWS CLI and Console, improving security posture and audit readiness for permissions like S3 buckets and other AWS services.
 - Built serverless event-driven architectures using:
 - Lambda functions with python and added zip layers of libraries like Pandas.
 - Step Functions with JSON.
 - EventBridge: Automated using Event-driven architecture.
 - Established infrastructure monitoring and alerting using CloudWatch and cost optimization strategies.
 - Used advanced prompt engineering and Claude Code CLI for development with latest MCPs.
 - Used GitHub actions for CI/CD.
 - Deployed S3 buckets, created S3 Inventory and added lifecycle policies.

- **AI/LLM:**
 - Leveraged state-of-the-art LLMs (Claude Opus 4.1, GPT-5 Thinking, Gemini 2.5 Pro) and code editors (Cursor.AI, WindSurf, Zed, Claude Code CLI) to prototype rapidly accelerating PoC turnaround significantly.
 - MCP: Sequential Thinking for structured problem-solving, Task Master AI for task management & organization, Brave Search for searching information.
- **Document & Technical Writer: 22.5%**
 - Developed comprehensive technical documentation, including API endpoints, deployment prerequisites, and integration guidelines to align stakeholders on project milestones.
 - Contributed to technical diagrams, and maintained deliverables, enhancing the project's architecture and deployment planning.
 - Translated & communicated project specifications to non-technical team members & stakeholders.
- **Develop & Rapid Prototype: 15%**
 - Drove rapid prototyping initiatives—leveraged AI development to accelerate major project delivery from idea to implementation in hours.
 - Reduced development cycles greatly through intelligent prompt engineering.
 - Developed many web apps:
 - Geospatial product: visualized citizen movement patterns, built a web-based online tool for managing 100s of GBs of location data.
- **Integration: 10%**
 - Orchestrated platform integrations (Cinchy.com) to expand service capabilities.
 - Worked with a B2B company, Cinchy to use their product as our centralized data network.
 - Completed Cinchy University and learned about their product.
 - Designed & maintained scalable database schemas for 12 cities ensuring real-time data synchronization for our QoL Impact website.
 - Developed & maintained Cinchy CQL queries, and tested them in the Cinchy Platform.
- **Scrum & Agile: 7.5%**
 - Tracked tasks in daily stand-ups for all team members.
 - Created biweekly sprints reports and helped with sprint planning.
 - Created and maintained the financial budget of the project.
- **Test: 7.5%**
 - Implemented GitHub Action workflows with automated testing using Cursor.AI and LLM model, Claude Sonnet 3.7.
- **Design: 5%**
 - Design a wireframe and high fidelity prototype in Figma for my novel Indicator Science idea to showcase the science and process behind Quality of Life Initiative Indicators.

Region of Waterloo – Smart Waterloo Region Innovation Lab

Hyperledger Fabric Architect & Mobile Developer

Hybrid (Kitchener)
Feb 2024 – June 2024

- Designed architecture for custom Blockchain network using Hyperledger Fabric architecture and Smart Contracts for municipal applications.
- Built proof-of-concept implementation using Docker containerization for Organizations.
- Explored consensus mechanisms.
- Used Node.js, Go, YAML and XML.
- Wireframed & designed the iOS app in Figma.
- Developed the iOS app in Xcode using Swift.

PROJECTS

Chatbot & AI Agent using AWS Bedrock with RAG, Embeddings & Vector DB.

- Built intelligent Q&A system using Python, AWS Bedrock, vector embeddings, and PGVector.
- Using function calling and tool use in AI Agent.

Resource Management System

- Built task management platform with Next.js, React, TypeScript supporting 17 users with real-time updates.
- Accelerated development by using LLMs and used Airtable as the database.
- Used MCPs and intelligent Prompt engineering for efficient development.

Personal Website

- LLM-driven and AI Assisted development.
- Effectively used MCPs to optimize token usage and looking up documentation.
- Used MCPs like TaskMaster in conjunction with Sequential thinking for effective planning.

TECHNICAL SKILLS

- **AWS:** S3, Glue, Event Bridge, Athena, QuickSight. (transferable to Azure).
- **Security:** IAM.
- **Languages:** Python, PySpark, JSON.
- **Libraries:** Pandas, Boto3.
- **Databases:** SQL, PostgreSQL.
- **Infrastructure as Code:** Terraform.
- **Version Control & CI/CD:** GitHub, GitHub Actions (transferable to GitLab CI/CD).
- **AI:** Agents, Chatbot, RAG, Embedding, Retrieval, Vector Databases.
- **LLM:** Cursor.AI, AWS Bedrock, Claude Code, Model Context Protocol, OpenAI API.
- **Container & Orchestration:** Docker, AWS Lambda, Step Functions.
- **Observability:** CloudWatch, Cost Explorer.
- **Automation:** N8N.io.
- **API:** Postman.
- **Design:** Figma.
- **Programming and Database Concepts:** Data Structure, Object Oriented Programming and Relational Database Management System.
- **Software Development Methodologies:** Software development life cycle, Agile modelling, Scrum Modelling, Prototype, Unified Modelling Language.

EDUCATION

Python for Beginners – FreeCodeCamp

Post Graduate Diploma in Mobile Solutions Development – Conestoga College, Ontario

Bachelors in Computer Applications – Guru Gobind Singh Indraprastha University, India

2021 - 2023

2014 - 2019

LINKEDIN RECOMMENDATIONS

Grayson Bass, Innovation Advisor & Project Manager

Grayson managed Anmol directly.

I have worked with Anmol in two different roles. He was one of the last hires I made in one role and one of the first hires I made in the other.

Anmol is a consistently reliable, honorable, and effective team member. He jumps in and tackles any challenge. In less than 2 months, he built a data pipeline and scaled up to data engineering. His work powered incredible insights and a plug and play tool for analyzing large mobile ping data sets.

If I move to a third role, he would definitely be on my list to recruit.

Salman Naqvi, Senior Infrastructure Security and Backend Engineer

Salman worked with Anmol on the same team.

Over the 12 months that I worked with Anmol, I was consistently amazed by his ability to leverage emerging technologies, especially AI, to accomplish tasks I didn't think were possible in such short timeframes.

In particular, over a three-month period, he built a 500 TB data processing pipeline in AWS using AWS Glue, a project that would typically take an experienced data scientist 12 to 18 months to complete. He did this without any previous AWS or data science experience! He also produced rapid prototypes that were nothing short of jaw-dropping.

Anmol has an exceptional ability to quickly learn and implement entirely new technologies, even in areas where he has no prior experience. Whenever I'm hiring again, he'll be the first person I reach out to before considering any other candidates.

Ishu Trivedi, Senior Full Stack AI Engineer

Ishu worked with Anmol on the same team.

Anmol's deep domain expertise stood out from day one, especially when he helped me get onboarded and understand the project's technical nuances. He is the idea-generation champion of our team, always bringing fresh perspectives and staying ahead of the curve with emerging technologies. He has made remarkable contributions in building and optimizing our data processing workflows, particularly through his expertise in AWS-based data pipelines capable of handling large and complex datasets efficiently. Anmol's enthusiasm for exploring new tools and techniques consistently pushes our work to the next level. It's been a privilege working alongside him, and I highly recommend Anmol for any role that values innovation, technical excellence, and collaboration.

Guruprasanna Rajukannan Suresh, AI Software Engineer

Guruprasanna worked with Anmol on the same team.

I've worked with Anmol for over a year, and he has consistently shown strong technical and problem-solving skills. He independently built a scalable, cloud-native data pipeline on AWS capable of handling big and real-time data efficiently. He also contributed significantly to our Cinchy database platform project with his advanced SQL expertise. During brainstorming and problem-solving sessions, his analytical thinking and decision-making stood out and often guided management direction.

Anmol constantly explores new AI tools to enhance project performance and has developed several internal AI solutions to improve team operations. He's a creative, reliable, and forward-thinking engineer who delivers results.