

Hussain Abuwala

Software Developer · AI/LLM · Backend

Toronto, Canada | hussainabuwala.1997@gmail.com | linkedin.com/in/hussain-abuwala | github.com/HussainAbuwala | hussainabuwala.github.io

SUMMARY

Software developer with 3+ years of experience building AI-powered analytics products, backend services, and cloud-native applications at IBM. Progressed from Band 6 to Band 7 and delivered LLM-based systems that cut processing costs by 99.8%, improved performance 6.5x, and generated \$19K in monthly customer savings.

TECHNICAL SKILLS

Languages: TypeScript, Java, Python, Bash

AI: LLMs, Prompt engineering, Agents, Embeddings

Backend: Node.js, RabbitMQ, SQLite, nginx

Frontend: React

Infrastructure: Docker, Kubernetes, Linux, Git, k6

EXPERIENCE

Software Developer, Band 7, IBM, Toronto, Canada Oct 2025 – Present

- Rebuilt IBM watsonx BI metadata enrichment (v2) as a native LLM pipeline, cutting per-asset cost 99.8% (\$5.32 to \$0.009), delivering \$19K in monthly customer savings, maintaining 90%+ accuracy, and improving performance 6.5x.
- Developed Data Stories, an autonomous analytics agent that surfaced 2-3 decision-grade, verifiable findings from a dataset without requiring users to formulate questions; selected for executive review.
- Implemented Custom Instructions, enabling business users to encode domain rules and knowledge in natural language; integrated the instructions into asset discovery and SQL generation to produce answers grounded in each customer's business context.
- Built a visualization editor for IBM watsonx.data with manual authoring and automatic chart recommendations based on metadata enrichment, aggregation selection, semantic sorting, and numerical, categorical, and identifier type inference.

Software Developer, Band 6, IBM, Toronto, Canada Jan 2024 – Sep 2025

- Modernized a legacy metadata enrichment service (v1) and integrated watsonx.data intelligence classification, reducing glossary-artifact upload time from approximately 20 minutes to under 3 minutes; powered five core services spanning conversational analytics, visualization, insights, semantic search, and Suggested Questions.
- Built an LLM-powered Suggested Questions service that used enriched schemas to generate and pre-validate answerable analytical questions, creating a guided first interaction for users; recognized with an IBM Outstanding Innovation Award.

PROJECTS

URL Shortener | TypeScript, Node.js, SQLite, nginx, Litestream, Linux, Bash Oct 2026

- Built a URL shortener on a single server and load-tested it with k6 through nine scripted events up to 10% of Bitly's traffic (1,000 redirects/s); final design serves an estimated 877M redirects/month at 14.8 ms p99 with 0% errors for EUR 9.56/month, and recovers from machine loss in under 6 minutes. hussainabuwala.github.io/projects/url-shortener/

LLM from scratch | Python, NumPy, Jupyter, Matplotlib, unittest Oct 2026

- Building a character-level language model from scratch in a 14-episode video series (Python, NumPy, later PyTorch), from count-based n-grams to a decoder-only Transformer; each episode ships tested code and notebooks. hussainabuwala.github.io/projects/llm-from-scratch/

EDUCATION

University of Waterloo, Master of Mathematics (MMath) in Computer Science; CGPA 94/100 Jan 2022 – Apr 2023

Monash University, Bachelor of Computer Science (Honours); CGPA 4.0/4.0; Overall Best Feb 2016 – Jun 2020

Graduate (100+ cohort); High Achiever Award (top 1%)