

Rayan Nasrallah

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EDUCATION

McMaster University

Bachelor of Engineering, Software Engineering with Co-op | GPA: 3.86

Sep 2022 – Apr 2027

Hamilton, ON

EXPERIENCE

BMO Capital Markets

Software Engineer (Co-op)

Toronto, ON, Canada • Sep 2025 – Sep 2026

- Applied software design principles to own a new Payment Preparation Service flow from design through production, automating payments previously entered manually through a UI.
- Developed concurrent Java microservices with WebFlux and Kafka, applying back-end architecture principles to process thousands of payments worth **\$100M+ daily** across **6+ systems**.
- Mapped SWIFT MT payments to ISO 20022 pacs.008 and pacs.002/004 replies back, giving trading systems live payment status.
- Designed independently scalable ECS services using a single image and DynamoDB runtime configuration, including GSIs for low-latency payment lifecycle lookups.
- Secured service-to-service REST calls with Amazon Cognito tokens cached until expiry, using credentials from AWS Secrets Manager.
- Built AWS Lambda alerts that route rejections and missed 10- and 30-minute response deadlines to the owning team, off the payment path.
- Automated Docker and ECS deployments to **3 environments** through GitHub Actions, validating **7 payment flows** end to end with JUnit and CloudWatch monitoring.

Technical Business Analyst (Co-op)

Toronto, ON, Canada • May 2025 – Sep 2025

- Specified an ISO 20022 payment workflow replacing spreadsheet tracking of fixed-income trades, saving **40 hours** of manual work per week.
- Designed MT-to-MX (pacs.009) mappings and Kafka/IBM MQ message contracts linking **7 systems** from trading to settlement.
- Traced a settlement-data defect 3 systems upstream, built a reusable regression suite, and led UAT and SIT through go-live.

TecCentric

Cloud Engineer (Co-op)

Remote • May 2024 – Sep 2024

- Migrated **10+ clients** to hybrid Google Cloud environments, improving scalability, performance, and cost efficiency.
- Deployed and auto-scaled **10+ web applications** on Google Kubernetes Engine, Compute Engine, and App Engine.

PROJECTS

MacMarketPlace macmarketplace.ca

- Founded a React marketplace serving **400+ users** and **70 listings**; led **4 developers** through collaborative delivery, system design, and end-to-end software development.
- Integrated Algolia with Firestore synchronization to support real-time, low-latency search.
- Deployed the marketplace to a Google Compute Engine managed instance group, enabling horizontal autoscaling and high availability.

TeXPRs texprs.com

- Built a Next.js and TypeScript app that shows a GitHub PR's compiled LaTeX PDFs side by side, overlaid, or as a latexdiff via a URL swap.
- Designed a Dockerized Node.js compile worker and REST-based delivery flow on Fly.io, serving PDFs through encrypted tickets and reducing GitHub API calls per page load from **30 to 5**.
- Sandboxed untrusted LaTeX with per-job unprivileged users and shell escape disabled, validating the software design with **13 CI tests**, including malicious documents.

Reddit Advice Intent Classifier [GitHub](#)

- Built and evaluated a PyTorch BiLSTM with Flair embeddings and class-weighted loss for natural language processing (NLP).
- Scraped and manually annotated **2,000 Reddit comments** for five-class intent classification.
- Benchmarked four classifiers; the team's best model placed **top four** in the course's CodaBench competition (0.506 macro F1).

SKILLS

- Languages:** Java, Python, TypeScript, JavaScript, SQL, C++, C, Bash, HTML/CSS
- Backend & Frontend:** Spring Boot, WebFlux, Spring Data JPA, REST APIs, Node.js, Next.js, React, FastAPI
- AI & Machine Learning:** PyTorch, Hugging Face, Flair, scikit-learn, NLP, GitHub Copilot, AI Coding Agents, Large Language Models
- Data & Messaging:** DynamoDB, Firebase/Firestore, PostgreSQL, MySQL, Db2, Algolia, Kafka, IBM MQ
- Cloud & Delivery:** AWS, GCP, Docker, Kubernetes (GKE), Fly.io, Vercel, GitHub Actions, CI/CD, Git, Linux/Unix
- Testing & Security:** JUnit, Mockito, Postman, CloudWatch, Cognito, Secrets Manager, OAuth2
- Software Engineering:** Code Review, Large Codebases, Programming, Data Structures And Algorithms, Software Design, System Design, Back-end Architecture

CERTIFICATIONS

- Google Associate Cloud Engineer
- Cloudera Technical Professional