

Matteo Bombelli

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EDUCATION

Bachelor of Applied Science in Computing Science

Sep. 2022 - Apr. 2027 (Expected)

Simon Fraser University

Burnaby, BC

TECHNICAL SKILLS

Languages: Python, Java, C, C++, JavaScript, TypeScript, SQL, R, HTML/CSS

Technologies: React, Next.js, FastAPI, Spring Boot, Node.js, PostgreSQL, Redis, Tailwind CSS, Drizzle ORM

Cloud & Tools: AWS (S3), Azure (Entra ID), Vercel, Docker, Git, Nginx, Postman

WORK EXPERIENCE

Technical Analyst Intern | LineZero, Vancouver, BC (Remote)

May 2025 - Present

- Built and deployed a retrieval-augmented chatbot with **FastAPI**, **Python**, and **PostgreSQL** that answers questions from clients' internal knowledge bases, wiring in the **Workvivo API** for real-time chat and text embeddings for accurate search.
- Shipped integrations linking the company's employee-recognition platform to other **SaaS apps**, added real-time notifications and front-end features, and reviewed teammates' pull requests.
- Scoped and built bespoke client widgets and chatbots end to end, including a context-aware widget that surfaces employee updates and a reusable **RAG chat framework**, owning client discovery, security, and deployment for each one.
- Wrote internal **Python** tools to automate manual workflows, including a **Monday.com** migration tool that imported legacy **Excel** datasets and cut hours of repetitive data entry.
- Configured databases and managed cloud services across **Azure** (Entra ID and client identity), **AWS** (hosting for the RAG bot, recognition tool, and custom widgets), and **Vercel** (deployments).
- Onboarded and trained new interns, getting them productive on the team's stack and workflows.

Technician / Technology Associate | Staples Canada, Vancouver, BC

Jul. 2021 - Mar. 2025

- Diagnosed and repaired hardware and software issues from intake to handoff, and hit technology sales targets by matching customers with the right IT solutions.

PROJECTS

WebTunes | Next.js, TypeScript, PostgreSQL, AWS S3 | [Live Site](#)

Jun. 2026

- Built a self-hosted web music app where each user uploads a personal library to **S3** and streams it in the browser through presigned URLs with HTTP range requests, so the server never proxies audio.
- Added **PostgreSQL** full-text search (generated tsvector and GIN index) over title, artist, album, and lyrics, plus friend-based library sharing gated by a single shared access check.

URL Shortener & Analytics API | Spring Boot, Java, PostgreSQL, Redis, Nginx

Jan. 2026

- Built a REST URL-shortening service with **Base62** encoding for collision-resistant links, backed by a **Spring Data JPA** and **PostgreSQL** persistence layer.
- Cached hot URLs in **Redis** to cut database read latency and documented REST contracts for reuse.

Pipelined Reliable Transfer Protocol (PRTP) | Python, Wireshark

Nov. 2025

- Designed a reliable transport protocol over **UDP** with a three-way handshake, congestion and flow control, and pipelining driven by custom headers.
- Validated reliability with **Wireshark** traces and a packet-loss fuzzer on a non-blocking-socket server.

Blackjack vs Agent | R, React, TypeScript | [Live Site](#)

Feb. 2025

- Trained a reinforcement-learning Blackjack agent with a **Monte Carlo** simulation in **R**, improving win rate 15.3% over random play and converging to optimal basic strategy.
- Built an interactive **React** site with animations and sound so users can play against the agent.