

# Zachary Gameiro

Computing Science & Biochemistry Student | Systems & Applied ML

📍 Burnaby, BC

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## PROJECTS

### Receipt OCR → Structured Transactions

- Receipt ingestion pipeline → validated transaction JSON (merchant, date, totals, tax, line items)
- Prototyped with multimodal LLM for OCR + structured extraction
- Re-architected to self-hosted PaddleOCR/PyTesseract on Cloud Run to reduce latency, cost, and external dependency
- Schema-first normalization ensuring consistent, canonical transaction records

### Embedded Wireless Messaging on TI-84 Calculators

- Modified TI-84 calculators to enable wireless messaging via embedded Arduino + RF transceiver
- Reverse-engineered the TI-84 TRS link interface/protocol for bidirectional communication
- Designed and integrated internal hardware (Arduino Nano, RF module, power, soldering, enclosure packaging)
- Developed Arduino C/C++ firmware and TI-BASIC client software to implement a multi-user chat interface
- Achieved stable real-world wireless communication through signal, timing, and power optimization

### MIRO-Based SMLM Clustering Pipeline | SFU

- SMLM clustering pipeline using MIRO-based graph embeddings and density-based clustering
- Reproduced and trained MIRO on custom SMLM localization data using mutual k-NN graphs
- Identified molecular structures via DBSCAN/HDBSCAN and reconstruction outputs

### Auto Sales PDF Automator | Sherwood Park Toyota, AB

- Automated PDF paperwork generation from structured customer and vehicle data
- Programmatic PDF form filling mapped to standardized document templates
- Validation and normalization (required fields, dates, pricing, input cleanup) to prevent errors
- Consolidated multi-form manual entry into a single streamlined input workflow

## ADDITIONAL TECHNICAL EXPERIENCE

### 3D & 2D Games

Unity, Game Maker. Used blender for 3D models

### Video Editing

DaVinci Resolve, colour blending, masks, text, 3D renders.

### Full Stack Web Dev

React + Express JS API backend deployed (Firebase, AWS Lambda, Supabase)

### Full Stack Mobile Dev

React Native, & Swift. Deep understanding of dev-cycle.

### Fintech

AWS Quantum Ledger Database for financial ledger. Plaid for realworld banking data.

### Languages

Python, C/C++, Javascript, TI-BASIC, SQL

### Systems & Tools

Linux, Git, Docker, Google Cloud Run, AWS, Firebase

### ML / Data

PyTorch,, HDBSCAN, OCR pipelines, Clustering

### Hardware

Arduino, RF modules, embedded systems, soldering

## WORK EXPERIENCE

### Sales Associate | Sherwood Park Toyota – Summer 2025

- Managed online vehicle sales and customer correspondence
- Customer-facing sales and contracts in a high-volume dealership

### Construction Labourer | Various Sites – Summers 2020-2024

- Performed physically demanding work including scaffolding, concrete, and site setup
- Worked long shifts in safety-critical environments requiring reliability and teamwork

### Retail Associate | BCLDB – June 2025 - Current

- Handled regulated products, inventory tracking, and customer verification
- Operated under strict compliance and cash-handling procedures

### Lifeguard & Swim Instructor | YMCA – 2018-2020

- Ensured public safety and emergency response in regulated aquatic facilities
- Instructed children and adults; maintained certifications and safety compliance

### Grounds Crew | Golf Course – Summer 2020

- Maintained course grounds and facilities under early-morning and time-critical schedules
- Operated equipment and followed safety procedures in outdoor work environments

## EDUCATION

### Bachelor of Science in Computing Science and Biochemistry/Microbiology

Simon Fraser University, Burnaby, BC

Expected December 2026

- **Relevant Coursework:** Data Structures & Algorithms, Database Systems, Discrete Mathematics, Probability & Statistics, Biomedical Computing.