Dami Peng

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Canadian Citizen · TN Visa Eligible

EDUCATION

University of Waterloo — Waterloo, ON
Bachelor of Mathematics - Computational Math (Honours) — *Sep 2022 – Dec 2027*

- **Coursework:** Object Oriented Programming, Computer Architecture, Data Structures & Algorithms, Numerical Computation, Statistics, Mathematical Optimization, Combinatorics

EXPERIENCE

Shopify — Incoming Winter 2027
Software Engineer Intern — *Toronto, ON*

IBM — Sep 2026 - Dec 2026
Software Engineer Intern - Skills Network — *Toronto, ON*

- Cut Redis memory 99% and raised uploads from 20MB to 500MB via direct-to-S3 ingestion with pre-signed URLs
- Decoupled TypeScript/Express server and compute-intensive workers into Terraform-provisioned Kubernetes deployments, isolating worker failures and enabling independent scaling while saving $7K/year
- Fixed lost WebSocket events for 83% of users by fanning out worker emits to all 6 API replicas via Redis Pub/Sub

IBM — May 2026 - Aug 2026
Software Engineer Intern - Skills Network — *Toronto, ON*

- Re-architected a 20K-LOC legacy app as a React/TypeScript SPA serving 80K monthly users, enforcing type-safe OpenAPI contracts via merge-blocking CI checks that caught 10+ breaking API changes before production
- Cut latency 71% and saved $10K/year in API costs by migrating LLM/STT models with zero eval regressions
- Built a realtime multi-agent voice chat in TypeScript using a LangGraph state machine and an LLM to route turns, streaming TTS output to achieve sub-1.2s first-audio latency across 92 languages

IBM — Jan 2026 - Apr 2026
Software Engineer Intern - Skills Network — *Toronto, ON*

- Replaced pod log searches with per-job Bull Board logs for 24K monthly BullMQ jobs, surfacing 20+ bugs
- Built JSON/HTML/MD translation APIs using AST serialization to preserve structure, cutting hallucinations 40%
- Migrated 100+ annual portal deployments to Terraform GitOps via GitHub Actions, removing local credentials

University of Waterloo — Sep 2025 - Dec 2025
Undergraduate Research Assistant (Accelerated Gradient Descent) — *Waterloo, ON*

- Trained CIFAR-10 image classifiers in PyTorch, building a harness to benchmark gradient-descent optimizers
- Extended accelerated optimization algorithms, achieving 10% faster training convergence vs baseline optimizers

Civiconnect — Jan 2025 - Apr 2025
Software Developer Intern - Nurse Recruit — *Toronto, ON*

- Migrated Postgres event listeners to Supabase Realtime broadcasts, reducing job update latency by **66%**
- Integrated Stripe API to automate billing, eliminating manual invoicing across **60+** transactions per month

PROJECTS

C Compiler | *C++, Flex, Bison, LLVM*

- Built an end-to-end C compiler with Flex and Bison using a two-pass architecture: symbol collection, then semantic analysis and LLVM IR code generation
- Designed a type-safe AST with 15+ node types using C++17 std::variant and move semantics

TECHNICAL SKILLS

Languages: TypeScript, JavaScript, Python, Go, SQL, C++, C, Java, Bash
Infrastructure & Systems: Kubernetes, AWS, Terraform, Docker, Redis, Helm, GitHub Actions, CI/CD, Linux
Backend & Web: Node.js, Express, REST APIs, Microservices, React, PostgreSQL, Supabase
ML & Testing: PyTorch, Jupyter Notebook, Playwright, Optimization (Linear & Non-linear Programming)