Hetang Mehta

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Education

University of Alberta April 2027
BSc Computer Engineering (Co-op Program) *Edmonton, AB*

- **Relevant coursework:** Data Structures & Algorithms, Object-Oriented Software Design, Operating Systems, Parallel & Distributed Programming, Databases

Experience

Systems Developer Student Jan – Aug 2024; Jan – Aug 2025; May – Dec 2026
Canadian Natural Resources Limited (CNRL) *Calgary, AB*

- Cut worst-case load time by 81% (117s → 22s) on a key workflow by profiling and debugging the Oracle/VB.NET data path and moving a 59s operation off the critical path; added timing instrumentation for monitoring.
- Took over as lead developer of a core capital budgeting application after a team transition: own releases, deployments and production support (troubleshooting and fixing live issues), work across agile sprints, act as sole technical contact for 5 business stakeholders, and onboarded a new developer.
- Cut release validation from 10 days of manual UAT to 4 minutes by building 300+ automated unit tests for the economics engine, keeping the codebase maintainable.
- Redesigned Oracle SQL schemas, optimized queries and enforced data integrity constraints, reducing defects by 33% and recovering 100+ hours/yr of engineer idle time.
- Built an import workflow on the third-party Enersight API that maps external assets to budget records, with privilege checks, version locks and a per-asset audit trail for reliable, consistent data.
- Designed and shipped a PWA backed by REST API services (C#, .NET, Blazor, Azure CI/CD) that gives 500+ engineers one reliable source for well production data, improving productivity by 30%.

Machine Learning Engineer Sep 2025 – Present
Alberta BIONIX (Student Club) *Edmonton, AB*

- Lead a 2-person ML team taking prosthetic-knee control models from raw data to evaluation; built feature engineering pipelines over a 26GB EMG gait dataset (Python, Pandas, NumPy).
- Trained CNN models for real-time knee flexion prediction, achieving 87% accuracy across locomotion modes (sitting, standing, walking, running).

Data Analyst Intern Sep 2023 – Dec 2023
Suncor Energy *Fort McMurray, AB*

- Built 3 Python automation tools for SAP data workflows, saving 30+ hours/week of manual work and $26K annually.

Projects

Multithreaded Concurrent Server | *C, POSIX Threads, Sockets*

- Built a thread-pool TCP server handling concurrent client reads and writes, guaranteeing data consistency with mutexes and reader-writer locks.

Energy Copilot | *Python, FastAPI, PostgreSQL, pgvector, Next.js* In progress

- Designing a GenAI agent that answers plain-English questions over Alberta well production data using read-only SQL generation and pgvector retrieval, with an eval-first test plan.

Technical Skills

Languages: Java, Python, C++, C, C#, SQL, TypeScript, JavaScript, VB.NET
Concepts: Data structures & algorithms, object-oriented design, concurrency, unit testing, debugging, SDLC, agile
Databases: Oracle, PostgreSQL (pgvector), MySQL, MongoDB (NoSQL); SQL query optimization, schema design
Tools: Azure (CI/CD), Docker, Git (version control), Linux, React, Next.js, Node.js, .NET, Blazor, REST APIs
AI-Assisted Development: Claude, Claude Code, GitHub Copilot