Alex Cao

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Education

York University (Expected) December 2026
Bachelor of Science, Hons. in Computer Science *Toronto, ON*

- **GPA:** 3.5/4.0
- **Relevant Coursework:** Data Structures & Algorithms, Object Orientated Programming, Database Systems, Software Design, Building E-Commerce Systems

Experience

Incoming Software Developer Sep 2025 – Present
YU Blueprint *Toronto, ON*

- Incoming Software Developer at YU Blueprint, working on the Gal Senior Care Foundation project

Projects

PowerRange | *Next.js, Spring Boot, Maven, PostgreSQL, Docker, AWS, Redis, Nginx, Gemini*

- Built a modular full-stack e-commerce platform with **Next.js** frontend and **Spring Boot** microservices backend
- Deployed containerized services with **Docker** and **Nginx** to **AWS ECS** for scalable, high-availability architecture
- Secured and modularized **REST APIs** with **OpenFeign** for microservice communication and **JWT**-based auth
- Integrated a real-time AI chatbot via **Gemini** APIs and **WebSockets** to provide personalized customer support
- Reduced API calls by **60%** and improved response time by **40%** using **Redis** caching and bulk endpoints

Lebronary | *Next.js, TypeScript, Prisma, MySQL, Firebase, AWS RDS*

- Built a full-stack library platform with role-based access control and real-time book tracking for users and admins
- Engineered a scalable backend using **Prisma**, **MySQL**, and **Firebase** for efficient querying and real-time updates
- Integrated server-side **Stripe** APIs with webhook handlers for live transaction processing and status updates
- Secured the app with **NextAuth.js**, **JWT** sessions, and **bcrypt**-based authentication flows
- Validated scalability with **1,000+** books and **50** concurrent users, sustaining $<$**200ms** query times under load

YorkU Parking System | *Java, Swing, Maven, JUnit*

- Developed a **Java Swing GUI** parking system with full **CRUD**, adhering to **MVC** and **OOP** design patterns
- Achieved **96%** test coverage and **77%** PIT mutation score using **JUnit** and **Mockito** under **TDD** practices
- Automated builds and reports via **Maven** with integrated testing and static analysis workflows
- Applied **Factory** and **Adapter** patterns to ensure scalable, maintainable, and modular code structure

OdontoAI | *React, Python, PyTorch, Flask*

- Created a computer vision tool for automated dental X-ray analysis, detecting caries, impacted teeth, and lesions
- Trained a custom **YOLO11** model on **800+** annotated images, achieving high accuracy across **50 epochs**
- Iterated on model and UI based on user feedback to improve usability and accuracy
- Built a **Flask REST API** integrated with a React frontend for real-time image inference and condition reporting

CoinGecko Clone | *React, Vite, JavaScript, Tailwind CSS*

- Built a responsive crypto analytics platform using the CoinGecko API to display real-time and historical data
- Integrated **Redux Toolkit** for efficient state management and user features like favoriting coins
- Visualized price trends and market performance with interactive charts powered by **Highcharts**
- Developed a searchable, customizable table displaying key metrics for **100+** cryptocurrencies

Technical Skills

Languages: Java, Python, C, JavaScript, TypeScript, SQL
Frameworks & Libraries: React, Node.js, Express, Next.js, Vite, Spring Boot, JUnit
Databases: MySQL, PostgreSQL, MongoDB
Tools & Technologies: Git, Docker, AWS, Firebase, Maven
Development Practices: Agile, Test-Driven Development (TDD), Continuous Integration/Deployment (CI/CD)