# Lelin Zheng (She/Her)

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## EDUCATION

**Northeastern University** Sep 2024 – Dec 2026
***M.S.** in Computer Science*, GPA: 4.0 / 4.0 Seattle, WA
Relevant Coursework: Object-Oriented Design, Computer Systems, Algorithms

**University of Alberta**
***B.Ed**. in Education with Distinction*, GPA: 3.8 / 4.0 Sep 2020 – May 2022
***M.S.** in Materials Engineering*, GPA: 4.0 / 4.0 Sep 2017 – May 2019
Edmonton, AB

## TECHNICAL KNOWLEDGE

- **Languages:** Python, Java, C, JavaScript, HTML/CSS, SQL
- **Tools & Frameworks:** Git, Linux/Unix, React, Node.js, Express.js, Bootstrap, Jest, Supertest, PyQt6, Java GUI (AWT & Swing), Tableau, Flask, Django, JUnit
- **Databases & Services:** MySQL, SQLite, MongoDB Atlas, Vercel, Render

## RELEVANT WORK EXPERIENCE

***High School Computer Science Teacher*** Sep 2022 – Jun 2024
*Calgary Board of Education, Crescent Heights High School* Calgary, AB
- Taught Computer Science to 100+ students in grades 10 and 11, covering programming fundamentals, algorithms, procedural and functional programming, **OOP** in **Python**, and **HTML/CSS** for web development.
- Developed a **Python**-based scheduling application that efficiently organized a 10-team inter-school badminton tournament, reducing manual coordination time by over 80% and ensuring conflict-free match scheduling.

***Research Assistant*** Oct 2019 – Sep 2020
*University of Alberta* Edmonton, AB
- Analyzed data from 200+ tensile, UV degradation, and compression tests to understand degradation patterns.
- Developed an end-of-life sensor for textiles that delivers warnings at 50% and 80% deterioration thresholds.

## PROJECTS

***Task Master: Full-Stack To-Do List*** April 2025
*Personal Project*
- Developed a full-stack task management app using **React**, **Node.js**, **Express.js**, **MongoDB Atlas**, and **Bootstrap**, featuring **JWT authentication**, protected routes, and **RESTful APIs** for full CRUD functionality.
- Tested backend with **Jest** and **Supertest**; deployed frontend on **Vercel** and backend on **Render**, with environment configuration via **dotenv** for secure production readiness.

***Qualcomm On-Device AI Hackathon: AI-Powered Narrative Connect Four (2nd Place Winner)*** March 2025
*Northeastern University & Qualcomm Technologies & Microsoft*
- Engineered a **PyQt6-based GUI** with multi-threaded event handling for a responsive and interactive **LLM-integrated** Connect Four game experience, featuring dynamic UI updates and real-time AI narration.
- Integrated **local LLM inference via Ollama (Mistral-7B)** with game logic algorithms **(minimax with alpha-beta pruning)**, implemented speech-to-text **(Whisper ASR)** for AI-driven commentary for a seamless offline experience.

***Gesture-Based Music Creation App in Java*** Sep 2024 – Dec 2024
*Northeastern University*
- Designed and implemented an interactive **Java GUI (AWT/Swing)** for gesture-based music composition, achieving 90% recognition accuracy using bounding boxes, subsampling, and coordinate transforms.
- Applied **OOP principles** across 20+ Java classes, increasing music composition efficiency by 60% and enhancing modularity by 40% through refactoring, serialization, and reusable components.

***Job Application Form – Flask Web App*** Nov 2024 – Dec 2024
*Personal Project*
- Built a full-stack job application platform using **Flask**, **SQLite**, and **Jinja2**, enabling users to submit personal details with flash messages to provide real-time feedback upon successful submission.
- Designed a responsive and dynamic UI with **Bootstrap 5**, leveraging **Jinja2** templating for seamless HTML rendering and **SQLite** for efficient data storage and retrieval.