

# YUEZHEN (LILY) DONG

(647)-282-0624 ◇ Ningmengchem@gmail.com ◇ yuezhen-dong.com

## RELEVANT SKILLS

Languages	Python, Java, SQL, C/C++, JavaScript, HTML/CSS
Frameworks	Scrum, Spring Boot, Agile, React, ThreeJS, NextJS, Arduino, Pygame, Flask, OOP
Developer Tools	Git, Maven, Linux, PEGA, OpenCV, OpenGL, VSCode, Android Studio, Eclipse, IntelliJ

## EDUCATION

University of Waterloo - Faculty of Engineering	Expected Graduation MAY 2029
BASc in Electrical Engineering – President's Scholarship of Distinction \$2000	Waterloo, ON, CAN

## ACHIEVEMENTS

IBDP Graduate   CaYPT (Canadian Young Physicists' Tournament) National Champion   IYPT (International Young Physicists' Tournament) Bronze Medalist   FIRST Robotics Provincial Semi-Finalist

## WORK EXPERIENCE

Web Developer Coop	JAN 2025 - APR 2025
Java, Spring Boot, Maven, Apache POI, Git	AGF Investments

- Developed a **Java-based** ScoreCard application, featuring robust file archiving, large XLSX handling via **Apache POI streaming**, data validation/transformation, and a flexible properties-based configuration system.
- Developed an application ingesting large XLSX files with **Apache POI streaming**, filtering by date/time, archiving inputs, and generating Excel/CSV reports. Automated email distribution under **Maven/Git** with **Spring Boot**.
- Developed **Pega** test automation from scratch using scenario and **Selenium** tests for both front-end and back-end.

Technology Mentor	OCT 2020 - AUG 2024
iOS, iPadOS, macOS, Windows, Linux	CyberSeniors

- Guided **100+** seniors to proficiency in using various **operating systems**, completing the program in one month.
- Taught essential skills for setting up software accounts, configuring devices, and utilizing applications for daily tasks.

Website Developer	DEC 2020 - DEC 2023
Java, HTML/CSS, Javascript, Blender, Git	Beyond the Wards/Kindness Catalogue

- Built a dynamic website using **Java** for backend and **HTML/CSS, JavaScript** for frontend, ensuring responsive design and smooth user interaction.
- Created and integrated 3D models with **Blender** and JavaScript, while managing project versions with Git.

## PERSONAL PROJECTS

Portfolio Website	AUG 2024
Vite-React, TypeScript, TailwindCSS, ThreeJS, Blender, Git	

- Developed and designed a reactive website using **vite-react, threejs** for 3D visuals, and **TailwindCSS**.
- Created and animated 3D models for the website using ThreeJS and React. Github for VC and deployed on Vercel.

Grätzel Cell	JUL 2023 - JUL 2024
Arduino, EasyEDA, OnShape, Python, JSON, OpenCV, Tracker, Matplotlib	

- Constructed and optimized a **dye-sensitized solar cell** using titanium dioxide and iodine electrolyte to study the mechanisms of photovoltaic energy conversion.
- Evaluated the influence of electrolyte concentration, glass conductivity,  $TiO_2$  layer thickness, and temperature on cell efficiency through **electrochemical analysis** and precise measurements using multimeters and lux meters.

Marangoni Flow and Rayleigh-Taylor Instability in Evaporating Fluids	JUL 2021 - JUL 2022
Arduino, EasyEDA, ImageJ, Tracker, Matplotlib, Comsol Multiphysics, MATLAB	

- Investigated **Marangoni flow and Rayleigh-Taylor instability** by analyzing fluid dynamics at interfaces to study droplet behavior in experiments.
- Developed and optimized an **interferometry analysis** system with ImageJ, Tracker, and OpenCV for high-resolution tension measurement and analysis.
- Performed dynamic simulations using **MATLAB** and **Comsol**, achieving **93%** accuracy to verify experimental results with simulations.