ERICA (XUAN) HE

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Portfolio Website ◇ LinkedIn ◇ GitHub

SKILLS

Languages: C++/C, Java, JavaScript, Node.js, Python, MySQL, HTML, CSS, System Verilog, ARMx64
Tools React, Bootstrap, PostgreSQL, Android Studio, Git, GDB, Postman, Quartus, Arduino

EDUCATION

University of British Columbia Expected May 2026
Bachelor of Applied Science - Computer Engineering
Relevant Coursework: Java OOP, Web Programming, D.S. & Algorithm C++, Relational Database

ENGINEERING STUDENT TEAM

Software Member - Pianobot Sep 2022 - Nov 2023
UBC Open Robotics

- Implemented a translation program in C++ and Python that converts MIDI files into lines of data that indicates robot hand positions and finger pressing states on a keyboard in time order
- Conducted integration testing on input/output sourcing

PROJECTS

Reminder Web App [GitHub]

- Developed a reminder app that users can post and delete notes using React, Express, and PostgreSQL, demonstrating full-stack proficiency in web development.

Family Travel Tracker [GitHub]

- Implemented a web app where users manage visited countries, add family members, and visualize journeys on an interactive map.

Wildfire Detection Module

- Designed a system that collects real-time environmental data from solar-cell-powered sensors and reflects the analyzed wildfire risk dynamically on a web app
- Implemented sockets using TCP protocols to transmit data from the microcontroller to remote server using PHP scripts and Python

Maze Game

- Developed a C++ program that generates a maze comprising hexagon cells and solves the maze by determining the minimum distance from a source cell to a destination cell.

RC4 Decryption

- Implemented an RC4 decryption program that takes a 24-bit secret key and decrypts a 32-byte message using System Verilog on De1SoC

Pub-Sub with Twitter

- Implemented a program in Java that interacts with the Twitter API that assists users manage and fetch unread Tweets, featuring a 5-minute data caching system. Gained experience in concurrent programming

Potato Machine

- Designed a small CPU in System Verilog that can fetch/decode instructions, read/write to memory, and perform multiple arithmetic operations on 16-bit binary data.