

Elena Pan

(825)-431-2530 | elena.pan@uwaterloo.ca | elena-pan.github.io | github.com/elena-pan

SKILLS

LANGUAGES: JavaScript • Python • C/C++ • Kotlin • Java • HTML/CSS

TECHNOLOGIES: Node.js • React • MongoDB • Express.js • Flask • Wordpress • Unity • GCP • Firebase

EXPERIENCE

SOFTWARE ENGINEERING INTERN, The Energi Simulator | Nov 2020 – Present

- Created a Unity application to render reservoir data in VR by generating meshes for 3D VTK data
- Currently developing a machine learning algorithm to optimize mapping of properties to colours

ANDROID DEVELOPER, Women Empowerment League | Jul – Sep 2020

- Worked with the CEO to design an open-sourced Android app currently used by all staff and clients, with an appointment booking system, real-time chats, and user management
- Engineered MVVM architecture and databinding with Kotlin and Android Jetpack, integrated with a Firebase backend
- Implemented user anonymity to protect client identities by censoring names

WEB DEVELOPER, DreamCatchers Foundation | Jun – Aug 2020

- Created Wordpress plugin to automate matching seniors with volunteers, reducing operation time by 50%
- Designed an algorithm in PHP to generate pairings based on certain criteria from MySQL database queries

APPLICATION DEVELOPER INTERN, University of Calgary | Jul – Aug 2019

- Developed a Python app to analyze auditory neural data in 3D, which was published in the Journal of Neuroscience Methods
- Leveraged SciPy and NumPy to process matrix and feed data into VTK pipeline to render neuron response

PROJECTS

SMART GARDEN ↗

- Created a full-stack Android app built in React Native for automated plant care
- Engineered Node.js REST API to retrieve or process plant metrics from MongoDB, as well as execute commands to water the plant remotely via serial port communication between the server and Arduino
- Utilized edge detection and contour mapping in OpenCV to detect the height of the plant

FITSPIRE | EXERCISE TRACKER ↗

- Published full-stack web app for fitness tracking using MERN
- Designed a Cronjob on the server to send scheduled fitness challenges to users
- Implemented bearer authentication, email verification, and form validation

3D MULTIPLAYER MONOPOLY ↗

- Leveraged Unity to build 3D Monopoly game with client networking integrated using Photon
- Designed data models and implemented C# scripts to direct flow of gameplay

EDUCATION

UNIVERSITY OF WATERLOO, Candidate for Bachelor of Software Engineering (2020 – 2025)