

ANDREW GRAY

Motivated engineering student seeking employment in software development for a 12 or 16 month internship. Breadth of development experience, including web dev, mobile dev, game dev, AI, and AR/VR. Strong critical thinker with an ability to break complex problems into smaller, manageable parts. Skilled communicator of technical information. Always trying to learn more and improve my skill set. Avid reader and basketball fan.

EDUCATION

B.A.Sc. - Applied Mathematics and Computing

Sept 2017 - Present

Queen's University

Kingston, ON

- Principal's Scholarship, Dean's Scholar
- Queen's Robomasters, Queen's Web Development Club, Intramural Basketball, Queen's Powerlifting Club
- Relevant coursework: probability and random processes, signals, data structures, algorithms, advanced programming in C, OOP in Java, computer architecture and digital systems
- GPA: 4.05/4.30

PROFESSIONAL EXPERIENCE

Technology and Innovation Intern

May 2019 - Aug 2019

World Vision Canada

Mississauga, ON

- Took lead ideation and programming roles in developing a social engagement mobile-app using Nativescript and Firebase technologies. Worked with various internal teams to find in-market and internal opportunities for testing the app. Pending approval for deployment on both the Google Play store and Apple's App Store.
- Led the development of a web-app that automatically identifies content errors in company webpages. Worked with internal teams to identify internal needs; deployment led to improvement in internal efficiency through reduced work hours. Developed using Node.js and Express.js.
- Proposed and developed digital signage solution for navigating company meeting rooms using frontend web technologies, leading to internal savings.
- Implemented VR payment solution using Unity and Oculus to engage donors and increase donations.
- Worked in an agile environment; participated in daily standups and articulated software solutions to peers with various technical backgrounds.

Technology R&D Intern

May 2018 - Aug 2018

World Vision Canada

Mississauga, ON

- Researched emerging technologies to aid in donor engagement, improve internal efficiency, and increase donations. Identified use cases and presented project ideas.
- Developed various Augmented Reality (AR) and Virtual Reality (VR) prototypes using Unity game engine.
- Worked in team of four interns to develop a public engagement video game using Unity and hand motion sensors. Worked with marketing innovation team to optimize delivery and deployment of the video game to promote company media efforts.
- Took lead project ideation and software development roles in creating an AR video game deployed within the SnapChat app and promoted at several public company events. Achieved 100M+ views within the SnapChat app.

OTHER EXPERIENCE

Computer Vision/AI Team Member

Oct 2018 - Present

Queen's University Robotics Club

Kingston, ON

Team member on the Computer Vision/AI team of my University's robotics club. Our goal as a team is to produce a robot that will be able to autonomously shoot projectiles at an opposing robot while also reacting to the opposing robot firing projectiles back. Our goal is to participate in the International Conference on Robotics and Automation in France in May, 2020. Some tasks I have worked on include:

- Worked in team to develop GUI with Processing/Python to label image data to then be used as training data for our ML models.
- Currently working with our team to develop a genetic algorithm and CNN using Tensorflow to train the autonomous robot ML models. Will be applied in 2D simulation we developed using JavaScript.
- Independently developed team website: <https://queensknight.ca/>.

PROJECTS

2D RPG

Currently developing a 2D RPG using Unity. See the development log [here](#). Learning lots about large project organization, video game AI, and graphic design.

A* Pathfinding Implementation

Implemented the A* pathfinding algorithm in JavaScript, having first been introduced to Dijkstra's algorithm through my Data Structures and Algorithms university class. Using pathfinding implementation for the 2D RPG I'm currently building.

Promptu (TOHacks 2019 hackathon project)

Used Node.js, Google NLP API, Google Draw API to produce a 'draw what you say' public engagement application. Large public screen display contains mural of all the drawings clients send to the display via a public URL.

D&D Online Character Sheet

Learned PHP to develop a full-stack web-app that allows users to create an account and save D&D characters to their account. Designed custom MySQL database to optimize user data storage/access.

Lloyd's Deployment Algorithm Analysis and Implementation

As part of an engineering design course for my degree requirements, I worked with other engineering students to propose an application area for Lloyd's deployment algorithm in the efficient deployment of agents over a density functions. Optimized inputs to algorithm and produced density map from tumour images using MATLAB.

7-Minute Workout App

As part of an engineering design course for my degree requirements, I worked with a client and other engineering students to create a 7-Minute iOS workout app (developed using Swift/Xcode) that provides specialized exercises to individuals suffering from osteoporosis.

Minesweeper variant

Developed Minesweeper variant called 'Mousesweeper' using Java as part of high school programming class. Implemented OOP principles including abstract classes and interfaces and utilized SDLC project planning methodology.

Quandary

Taught myself Swift/Xcode to develop a rebus puzzle game. Rebus puzzles are visual logic puzzles, and I personally created 90 unique puzzles of this type. Deployed game to App Store.

SKILLS

Programming | Java, C/C#, Python, SQL

Web Dev | HTML/CSS, JavaScript (Node.js, jQuery, Vue.js, AngularJS, MongoDB), PHP/MySQL, ASP.NET

Mobile Dev | Swift/Xcode, Nativescript

Numerical Processing | MATLAB, Python, Tensorflow, Maple

Other | Unix/Linux, Unity game engine, Git

CERTIFICATES

Canadian Securities Course (CSC) | Canadian Securities Institute | Currently pursuing

Machine Learning A-Z: Hands-on Python and R in Data Science | Udemy | Currently pursuing

Learn Python and Ethical Hacking from Scratch | Udemy | Completed Aug 2019

The Complete Node.js Developer Course | Udemy | Completed July 2019