ANDREW GRAY

Motivated engineering student seeking employment in software development for a 16 month internship. Breadth of software development experience, including web dev, mobile dev, game dev, AI, and AR/VR. Strong creative and 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.

EDUCATION

B.A.Sc. - Mathematics and Computer Engineering   **Sept 2017 - Present**

Queen's University   *Kingston, ON*

- Principal's Entrance Scholarship, Dean's Scholar
- Relevant coursework: probability, signals, data structures, algorithms, advanced programming in C, OOP in Java, computer architecture and digital systems {depends on job}
- GPA: 4.05/4.30

PROFESSIONAL EXPERIENCE

Technology and Innovation Intern   **May 2019 - Aug 2019**

World Vision Canada   *Mississauga, ON*

- Took major roles in the ideation and programming of a social engagement mobile app using Nativescript, Firebase technologies.
  - Deployed app to Google Play Store.
  - Presented app to various internal teams to identify use cases. Participated in assessing potential deployment opportunities for app to both internal teams and in-market audiences.
  - Deployed app to internal testing group in September 2019.
- Created a web-app that automatically identifies content discrepancies across company webpages and internal documentation.
  - Worked with internal teams to identify the project requirements and test app usability.
  - Deployment led to improvement in internal efficiency through reduced work hours.
  - Independently completed Node.js Udemy course in July and used newly acquired skills to complete project that month.
- Proposed and developed digital signage solution for office floor-maps using frontend web technologies. Led to internal savings through selection of digital option over alternative of metal-engraved signs.
- Prototyped a VR payment solution using Unity and Oculus to engage donors and promote donations.
- Worked in an agile environment; participated in daily standups and articulated software solutions to peers across various professional 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 and presented use cases projects to various internal teams.
- Developed various Augmented Reality (AR) and Virtual Reality (VR) prototypes using the Unity game engine.
- Worked in team of four interns to develop a video game using Unity and hand motion sensors to improve public engagement.
  - Worked with marketing team to optimize delivery and deployment of the game to promote company media efforts.
  - Deployed game for company event at Cineplex in October 2018 to promote release of company-produced documentary.
- Took lead project ideation and software development roles in creating an AR video game that was deployed within the SnapChat app and was promoted at several public company events. Achieved 130M+ 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.
  - Worked in team to develop GUI with Python to label image data to then be used as training data for our ML models.
  - Currently working on vision algorithms and strategy algorithms for one-on-one robot combat.
  - Using Tensorflow, CNNs, genetic algorithms to train autonomous models. Will be applied to 2D simulation we developed using JavaScript.
  - Developed team website: http://queensrobomaster.ca/.

PROJECTS

<u>Unity Character Dialog Editor Plugin</u>
Developed a custom editor in Unity for visually creating dialog trees. Currently pending review for deployment to the Unity Asset Store.

<u>A* Pathfinding Implementation</u>
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.

<u>Promptu</u> (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.

<u>D&D Online Character Sheet</u>
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 iOS app and deployed app to the App Store. Rebus puzzles are visual logic puzzles, and I personally created 90 unique puzzles of this type.

SKILLS

Programming | Java, C, C#, Python, JavaScript, TypeScript, Assembly, SQL, VHDL
Web | HTML, CSS, Node.js, AngularJS, MongoDB, PHP/MySQL, ASP.NET
Mobile | Swift, Nativescript
Numerical Processing | MATLAB, Tensorflow, Maple
Other | Unix/Linux, Unity, Git

CERTIFICATES

Machine Learning A-Z: Hands-on Python and R in Data Science | Udemy | Completed Aug 2019
The Complete Node.js Developer Course | Udemy | Completed July 2019
Learn Python and Ethical Hacking from Scratch | Udemy | Currently pursuing

INVOLVEMENT

TOHacks 2019 | Ryerson University | June 2019
QHacks 2019 | Queen's University | Feb 2019
Hackference 2017 | Toronto, ON | Nov 2017
Led coding workshop at elementary school | Guelph, ON | May 2017