John **Song**

Software Engineer · Game Developer

Toronto, Ontario, Canada

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Education

University of Toronto — *Toronto, Canada*

B.Sc. in Computer Science, Specialist Software Engineering Co-op — *2014 - 2019*

- Minor in Statistics

Work Experience

Government of Ontario — *Toronto, Canada*

.Net Developer — *Jan. 2018 - Sept. 2018*

- Implemented a RESTful API using server and client architecture for new Angular2+ application
- Provisioned and improved an existing database to create a normalized schema resulting in an improvement of an average of 3 seconds to 0.4 seconds per query
- Created, designed, and implemented a new frontend application using Angular, HTML, and CSS taking into account material design, and accessability needs
- Built fully automated CI/CD pipelines on TFS for containerized applications using Docker, Visual Studio, and MSSql.

Ctrlfyp — *Toronto, Canada*

Co-founder & Software Engineer — *Jan. 2016 - Currently*

- Currently developing a pixel art 2D game using C# in Godot; leading a team of 3
- Designed functional game model based on the Model Control View architecture; implmeneted OOP, Oberservor, and other design patterns
- Designed and implemented a basic computer AI using A path finding algothrim and alpha beta pruning

Caseware Inc — *Toronto, Canada*

Test Developer — *Jan. 2015 - Sept. 2015*

- Designed and implemented automated tests aimed at finding bugs in web pages using written in JavaScript and Java using Selenium, Protractor and Jenkins test modules
- Updated and changed previously written test suites, improving their versatility and coverage of tests resulting in improved run time
- Created JSDocs and JavaDocs using a self-developed tool documenting both written tests suites and testing module

Technical Skills

Language/Markup	C++, Python, C#, C, Java, R, SQL, Bash, Node.js, React, Angular 2+, HTMl, SS, Javascript, PHP, Latex
Tools	Git, Jenkins, Docker, SVN, Selenium, Libgdx, Godot, Unity3d, Unreal Engine 4, OpenMP
Courses	Software Design, Computer Networks, Operating Systems, Computer Graphics, Data Structures and Analysis, Artifical Intelligence, Algorithm Design Analysis and Complexity

Projects

Fundamental of Game Programming

Github book on teaching the explaining the fundamentals of game programming

- Creating a crowd-sourced book on Github explaining the fundamentals of game programming
- Writing and explaining concepts core to game programming such as networking, graphics, and physics at an introductory level tailored to new game programmers

Divide the Tiles

Free puzzle game on Google Play and iTunes

- Developed and published an original free to play puzzle game on Google Play and iTunes in Java using the LibGDX framework; leading a team of 5
- Project focused on developing skills for object oriented programming, composition, single responsibility principle, and encapsulation

Custom Rendering C++ Engine

Created a custom graphics rendering engine in C++, supporting basic lightning, shading and meshes

- Developed a basic rendering engine supporting basic lighting, shading, and ray casting/tracing
- Implemented bounding volumes and meshes using AABBS and Octrees, added kinematics features and a shader pipeline