

Vincent Terpstra

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Programmer Profile

I am a programmer, an innovator, an entrepreneur. I have **3 years experience** developing Android applications with **Java**. I excel at creativity; designing and building functional applications. I recently graduated with a **Computer Programming Diploma** from **ICT Seneca**, learning fundamentals in full stack development, database management and object-oriented programming. I am always learning and applying my knowledge to challenge myself to implement new and unique ideas.

Project Portfolio: <https://vincent-terpstra.github.io/>

Discord Chat-bot - Javascript & nodeJS & Discord API Independent 2020

- Implemented a Command Line Interface for managing an online, text based, RPG. Inspired by Dungeons and Dragons

Pool Game - Java & LibGDX & OpenGL – Independent 2019

- Creating games for Android using Java, Libgdx and OpenGL.
- Implemented the UI, physics engine, and renderer for an Android application.
- Designed an OpenGL shader to render 3D pool balls from a square, linear algebra and a Phong algorithm.

Sudoku Solver -- C & CUDA – Class group project 2019

- Collaborated with a team of students to profile a 25x25 Sudoku solver.
- Reprogrammed as a kernel for a Nvidia GPU using CUDA.
- Reduced the run-time of the algorithm from 16 minutes to 750 microseconds!
- <https://wiki.cdote.senecacollege.ca/wiki/TriForce>

Website Developer -- Javascript & nodeJS & express-- Class Assignment

- Created a basic employee management system, on a PostgreSQL database, with CRUD functionality
- Used MongoDB to implement a user login system with password encryption

Independent Projects – Java & LibGDX & OpenGL – Independent 2018

- A* pathfinder - Implemented a hexagonal grid and randomly generated 'infinite' map organized in Quad tree sections. Applied A* path-finding algorithm using a distance heuristic.
- Connect-Four AI - A backtracking AI for playing connect four. Utilizes path reduction to decrease compute time.

- Conway's Game of Life - An implementation of the Cellular Automata, using OpenGL and frame buffers.

Education - Computer Programming Diploma

Seneca's School of Information & Communications Technology 2018 - 19

- On Fall 2018 President's Honour List for academic achievement.
- **4.0 GPA**
- **Tutored** several students for the C++ final.

Classes & Skills

- **Web Development** - Javascript, html, css; Built a website with node.js, Express framework, and Handlebars templating. Implemented multiple back-ends using mongoDB and postgresSQL.
- **C++** - standard function library, containers, lambdas, pointers
- **Java** - simple apps with javaFX; sockets, streams, multi-threading
- **Database Management** – using IBM's iSeries & SQL, normalizing data, joins, CRUD; rpgle, cile
- **Systems Analyst** - Writing business use cases and system diagram documents
- **GPU - professional option** - Application profiling, writing kernels using **Nvidia CUDA** toolkit for many-core devices. Introduction to OpenCL.

Personal Interests

Game Dev – Board games – Distance running – Reading – Creative writing - Leetcode