

Ethan Lai

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Experience

Software Engineer (ASMPT, Tsing Yi Hong Kong): 08/2023 - 08/2024

- Programmed the firmware of an ILC (Iterative Learning Control) motor such that it increased the speed of the semiconductor assembly machine **by 10 times**
- Spearheaded the development of the **first Needleless Ejector** which is used to peel the die off of semiconductors with the help of force-sensing technology
- Modified the ASMPT service testing website such that engineers that are listed in all ASM company databases can **remotely run services and tasks around the globe**

Game Programmer (Other Ocean, Charlottetown PEI): 06/2022 - 09/2022

- Optimized game performance and the multiplayer networking library to **reduce loading times by up to 50%**
- **Wrapped legacy C++ code** from the original Intellivision *Night Stalker* game so it could be seamlessly used in C# scripts for the Unity game engine

Backend Software Developer (Design 2000, Scarborough ON): 06/2021 - 09/2021

- Built and trained a **U-Net semantic segmentation neural network** that identifies a sofa in an image, then allows users to swap the sofa's textures by using a **neural style transfer model**
- The segmentation model managed to reach a **validation loss of 0.2** and a **validation binary IoU of 0.8**

Notable Projects

Multiplayer-compatible Tetris

- Worked in a small team to create a Tetris battle royale game that features 2 to 5 player compatibility through **peer-to-peer hosting** and **TCP/UDP connections**
- Implemented a **REST API** to set up a peering connection with a **SQL** database so players can chat with each other in the game lobby

First-person RPG fighting game

- Published, programmed, and modeled a Unity game with countless tools and mechanics such as a **customizable AI** with path-finding, combat behaviors, dialogue, etc.

App Updater Tool

- Using the ASP.NET Core framework, developed a tool that allows developers to distribute an app that **automatically updates itself** by searching for a new version on an online file server

Skills

- **Languages:** Python, Java, C#, C, C++, Verilog, R, JavaScript, CSS, HTML
- **Technologies:** Tensorflow, PyTorch, ReactJS, NodeJS, ExpressJS, ASP.NET Core, JavaFX, MySQL, NoSQL, Unix/Linux Bash, Unity, Blender, Git

Education

University of Toronto | Computer Science Specialist | 09/2021 - Present

Achievements

- University of Toronto **Dean's List Scholar**
- **Computer Science** and **Computer Engineering** Gr. 12 academic awards