

# Noah Yacowar

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## SKILLS

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**Languages:** Python, C++, C#, VHDL, HTML, CSS, JavaScript

**Frameworks:** Unity Netcode, Test Complete, PyTorch, NumPy, Matplotlib, Arduino, .NET Core

**Software:** Git, Unity, Linux, Github, KiCad, AutoCAD, SolidWorks, Microsoft Office, JIRA/Confluence

**Tools:** Multi-meters, Oscilloscopes, Soldering

## WORK EXPERIENCE

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### System Quality Assurance

January 2024 - April 2024

Virtek Vision International

- Spearheaded development of an automated testing system, using **Test Complete** automating software.
- Submitted 9 different automated tests which reduced the original manual testing time by **95%**.
- Collaborated with another developer to build testing infrastructure from scratch.
- Created API testing scripts to ensure reliability and functionality with the API system.
- Led manual QA testing for new motorized mount product, identifying over **20** substantial defects and needed changes.
- Communicated with contractors to address product issues and add features.

### Research Assistant

May 2023 - August 2023

Defence Research Development Canada

- Developed a VR test-bed in **Unity** using **C#**, to simulate military equipment.
- Integrated **networking** using Unity's Netcode system. Synced player events with RPC calls, for real-time updates.
- Implemented **shaders** using unity's shader graph system and scripting, including thermal imaging goggles simulation.
- Produced a HUD system to integrate simulated AR overlays; including a mini-map and compass.
- Crafted scenarios, including in-game events and map design, meeting rigorous performance standards.
- Collaborated with military professionals to ensure simulations accurately replicated real-world scenarios.

### Computer Science Club Founder

April 2021 - June 2022

Personal Venture

- Led a group of 20 students alongside 2 other instructors. Taught coding concepts from **object-oriented** programming to **data sorting** and **game development**, meeting 3 times per week.
- Crafted lesson plans, workshops and projects to increase engagement, and outreach.
- Organized meetings with industry workers to give insight into industry tools and experiences.

## PROJECTS

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### Multiplayer Game

January 2024 - April 2024

- Created cooperative game-play using Unity's Netcode system, for up to **5** players, with survivors repairing generators while evading a pursuing killer.
- Established player state syncing mechanisms to maintain consistency among all players during game-play sessions.
- Implemented disconnection handling mechanisms to gracefully manage player exits and ensure uninterrupted game-play for remaining participants.
- Implemented RPC calls for seamless player data synchronization across clients.
- Designed and implemented a lobby system to streamline player matchmaking and game setup.

### Pong Game and AI

July 2023 - August 2023

- Built the game 'Pong' using **python** and pygame to deploy an AI to play against.
- Implemented **reinforced learning** using the NEAT algorithm, which trains itself based on game-performance.
- Graphed newly generated models against earlier models for data interpretation, and improvement visualisation.
- Analyzed data to find the trained AI maintained a **400%** lead over a stationary opponent, demonstrating effectiveness.

### First-Person Shooter Game

July 2022 - August 2022

- Built a horror-themed first-person shooter in Unity, where levels are randomly generated using prefabs.
- Implemented an **A\* path-finding algorithm** for the enemies, and used a grid system for level generation.

## EDUCATION

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**Candidate for BAsC in Mechatronics Engineering**

September 2022 - present

University of Waterloo - President's Scholarship