Nicholas J. Connors | Curriculum Vitae

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Experience

Matrox Electronic Systems Ltd., Dorval
Software engineering intern (Winter 2018, Summer 2019)
- Created automated test scripts for the Matrox Design Assistant IDE in C#.
- Implemented functions from the Matrox Imaging Library into Design Assistant for specific client applications.
- Clientside web development using jQuery and the JSViews template library.

McGill Computer Science Undergraduate Society helpdesk
Peer-tutor (Fall 2020 / Winter 2021)
- Assisted with coursework ranging from intro-level courses (COMP202 Foundations of Programming, COMP206 Introduction to Software systems) to upper-level (COMP302 Programming Languages and Paradigms, COMP350 Numerical Methods). This was done online through voice-calls and screen-sharing.

Machine Learning Bootcamp
McGill AI Society *MAIS 202* (Winter 2019)
- 9-week course including weekly lectures, assignments and final project. Created a webpage based melody editor in Javascript and HTML5 with helpful AI suggestions. Uses an LSTM model made in Keras and trained on classical music MIDI data. Webpage made using Flask web framework.

Projects

Android/desktop/web-browser games (published on Itch.io)
- *Asteroid Arcade*: Android application written in Java and using the LibGDX application framework. Shoot enemies and dodge hazards using motion controls.
- *Game-jam entries*: Web-browser applications made using the Godot engine. I have 5 publicly available free-to-play games including a puzzle-game, platformer and basic management simulator. All were made during 2-7 day long events.

New Horizons (Outer Wilds mod)
Outer Wilds world creation mod
- Unity game mod that reads in JSON files to create new planets or modify existing ones in Outer Wilds. Allows creators to make add-ons for the game without any coding knowledge.

Reinforcement learning space lander simulation
ImplementAI Hackathon 2018 1st place
- Modified and expanded on version of the OpenAI LunarLander-v2 gym environment made in a team of 4. Implemented a Deep Q Network using RLlib to train an autonomous reinforcement learning agent to land a virtual spacecraft. Performed in two 2D environments (lunar surface, earth ocean barge) each with varying physical parameters (magnitude of gravity, air resistance, stochastic wind).

Education

McGill University, Montreal
B. Sc. in joint Physics and Computer Science (*2022*)
- Research project: Formation of exoplanet distribution radius gap (Supervisor: Dr. Eve J. Lee).
- Tomlinson Engagement Award for Mentoring (TEAM): For Computer Science Undergraduate Society helpdesk.
- Academic exchange to Lunds Universitet, Sweden (Winter 2020).

Dawson College, Westmount
DEC in Science, graduated with honours (2018)
- Research project: Simulation of light-curve variation for eclipsing binary stars (Supervisor: Jonathon Sumner)

Publications

Lee, E. J. **Connors, N. J.** (2020) "Primordial Radius Gap and Potentially Broad Core Mass Distribution of super-Earths and sub-Neptunes" ApJ in press; arXiv:2008.01105