Peter Quinn

English, French, German (basic) peterquinn.ca Montréal, Québec, Canada

Education

Master of Science (Thesis), Electrical and Computer Engineering 2019 – 2021 (exp.)
McGill Graphics Lab, McGill University, Montréal, QC

- **CGPA**: 4.00/4.00
- **Research Areas**: Differentiable Rendering, Computer Graphics and Machine Learning
- Implemented a novel differentiable ray tracer in Python using PyTorch, deployed on a Linux based servers
- Co-organized and co-hosted the 2020 GRAPHQUON workshop
- **Awards**: NSERC Canada Graduate Scholarship - Masters, McGill Engineering Undergraduate Student Masters Award, Graduate Excellence Fellowship

Bachelor of Engineering, Honours Electrical Engineering 2015 - 2019
McGill University, Montréal, QC

- **CGPA**: 3.91/4.00
- **Awards**: Dean's Honour List, Dr. Alfred S. Malowany Prize, Brodeur-Drummond Scholarship, Faculty of Engineering Scholarship, J. W. McConnell Scholarship, Motorola Foundation Scholarship

Experience

Teaching Assistant Sept - Dec 2019
Realistic/Advanced Image Synthesis, McGill University, Montréal, QC

- Prepared and debugged assignments in a custom teaching rendering engine built in C++ and OpenGL
- Presented additional lecture material to students during tutorial sessions

Hardware Design Intern May - Aug 2018
Matrox Electronic Systems Ltd., Dorval, QC

- Performed qualification, documentation and troubleshooting of PCBs and FPGAs for upcoming products

Research Intern May - Aug 2017
Technical University of Kaiserslautern, Kaiserslautern, Germany

- Optimized microwave antenna designs in CST Microwave Studio, then manufactured designed antennas using photolithography in a clean room
- Constructed an antenna measurement setup and automate measurements using LabVIEW

Research Intern May - Aug 2016
McGill University, Montréal, QC

- Designed a 3D printed measurement apparatus with circuitry for laser heating samples and conducting optical measurements, controlled by C/Arduino interface

Member of Power Sub-Team 2015 - 2018
Autonomous Underwater Vehicle (AUV) Project, McGill Robotics, McGill University

- Designed and laid out custom microcontroller and power PCBs in DipTrace

Projects

GPT-2 D&D Items Fall 2020

- Trained OpenAI's GPT-2 model on a dataset of D&D items to generate novel item names and descriptions

AlphaZero Tic Tac Toe Reinforcement Learning Winter 2020

- Implemented an AlphaZero RL agent scratch and trained it through self play to play Tic Tac Toe

Deep Learning for Lighting Simulations Sept 2018 - Apr 2019

- Conducted an independent research project on improving ray tracing by modeling complex probability distributions with machine learning
- Modified the PBRT-v3 C++ renderer to communicate with a Python/PyTorch neural network to generate weighted samples, improving rendered image quality

More projects can be found on my personal website: peterquinn.ca