Karl-Etienne Bolduc

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AWARDS

- UDEM - Merit Scholarships from Graduate and Postdoctoral Studies (5000$)

- NSERC-USRA - Undergraduate Student Research Awards (5000$),

- IVADO - Undergraduate Research Initiation Grants [Declined] (6000$)

- FRQNT - Supplements of the NSERC Undergraduate Student Research Awards in 2020 (1500$)

RELEVANT INFORMATIONS

IFT 6113 - Geometric modeling and shape analysis [4.3/4.3]	Subdivision Algorithm Implementation (loop,butterfly, $\sqrt{3}$) / Implicit Fairing of Irregular Meshes using Diffusion and Curvature Flow Implementation /Arap and Biharmonic deformation implementation / [C++, Libigl, Eigen]
IFT 6145 - Computer vision [4.3/4.3]	3D Reconstruction with mirrors / Image compositions / 3D Calibration / [Mathematica, Python, OpenCV]
MTI882 - Photorealistic Rendering [4.3/4.3]	Path Tracing MC [MIS, Spectral, Volumetric [Unbiased], BVH,...] / [C++]
IFT 6390 - Fundamentals of Machine Learning [4.3/4.3]	Learning and experimentation on classic machine learning / [Python, Jax]

FORMATION

University of Montreal   Montreal
Master's degree in Computer Graphics   *GPA : 4.3/4.3 | Expected to graduate in 2023*

- Master's degree in Computer Graphics at Udem with Pierre Poulin as my advisor.
  I am interested in Geometry Processing, Sketch Processing, Rendering and Scientific Modeling.

University of Montreal   Montreal
Bachelor's degree in physics and computer science   *GPA : 4.14/4.3 | Completed Credits: 91/90 | Graduated in May 2021*

Collège de Maisonneuve   Montreal
Computer Science and Mathematics   *Cote R: 34.1 | August 2016 - June 2018*

VOLONTARY

Quart de nuit   Montréal
Co-organizer   *Mars 2020 - Mai 2020*
- Organization of an event bringing together several members face-to-face in order to promote group games.
- Room rental and specialized equipment
- Creation of a digital platform for member registration
- Cancellation due to the pandemic. Impossibility of taking place face-to-face.

Robin des Bois   Montréal
Waiter   *June 2016*
- Coordination of multiple tasks under pressure

Opération Père Noël   Montréal
Waiter   *November 2015*
- Quality verfication of Christmas toys
- Christmas Toy Quality Checking and Christmas Toy Packing for families in need.

Vélo Québec - Tour de l'île   Montréal
Guide   *June 2016*
- Collaboration, guidance and support of participants.

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Guide   *June 2015*
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EXPERIENCE

Ubisoft Montréal - La Forge
Generalist Programmer Intern R&D

Montréal

May 2022 - October 2022

Worked with the Environment team under the supervision of Amir H. (Shahin) Rabbani and Damien Rioux-Lavoie

- Studied and explored ideas to extend Compact Poisson Filters for arbitrary surfaces
- Maintained a small blog on my progress and related challenges
- Worked with common frameworks such as CUDA, Libtorch, Libigl

UdeM
Intern in Physics

Montréal

May 2020 - August 2020

With Normand Mousseau as my director, my research focused on the use of machine learning to replicate interatomic potential while reducing computing time. I was awarded a scholarship from NSERC for my internship.

- Developped programs with NumPy, Pandas and PANNA built on top of tensorflow 1.5
- Generated data with Lammps for PANNA to efficiently validate our model
- Worked with Git and Gitlab.

LRIMA - Collège de maisonneuve
Apprenticeship

Montréal

Jan 2018 - Jun 2018

My role as a research assistant was to develop a solution for the organization and optimization of parking spaces in dense areas with autonomous vehicles. https://lrima.cmaisonneuve.qc.ca/

- Gained experience with Java
- Developed a taste for research.

TEACHING

UdeM - Computer Graphics
Teaching Assistant

Montréal

Sept 2022 - December 2022

- Prepared classroom exercises
- Created and graded assigment 2 - Raytracing in C++

UdeM - IFT1016 - Programmation 1 (Neuroscience) [Programming 1]
Teaching Assistant

Montréal

Sept 2021 - Janvier 2021

- Prepared classroom exercises and In-Class demonstrations
- Created and graded assignments

Hackethon 2019 (UdeM)
Support

Montréal

February 2019

My role in the organization was to guide CEGEP students (equivalent of last year in high school and first year of university) throughout the Hackathon 2019 competition.

- Prepared the competition
- Supported students in difficult tasks.
- Explained relevant concepts for the competition to students

College de maisonneuve
Mathematic Tutor

Montréal

January 2018 - May 2018

- Motivated students to persevere and overcome their challenges
- Vulgarized mathematical concepts

PARTICIPATION

Hackethon 2017 & 2018
University of Montreal

Montreal

February 2017 & 2018