

# PHILIPPE MARCOTTE

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## EXPERIENCE

### Applied Research Intern

#### Druide

August – November 2019 Montreal, Canada

- Researching the best ways to tackle grammatical error correction problems with state-of-the-art NLP models in the context of integrating the solutions to the main software, Antidote.
- Establishing a pipeline from raw data to training and testing models quickly.

### Analyst Programmer Intern

#### Giro

May – August 2017 Montreal, Canada

- Developing web tools in Javascript to help developers manage tickets and issues on Team Foundation Server (TFS).
- Correcting bugs on back-end applications in C# for the integration of TFS to Visual Studio.

### C++ Developer Intern

#### Audiokinetic

May – August 2016 Montreal, Canada

- Adding features to the sound engine editor's (Wwise) UI.
- Adding features to the C++ sound engine.

### Junior Software developer

#### XYJ

July 2015 – January 2016 Montreal, Canada

- Development of web scrapers for automatic data collection on clients' competitors.

## TECHNICAL SKILLS

- Python, C++, C#, Java, HTML/CSS, JavaScript
- Pytorch, Deep Learning, NLP, Computer Vision
- Git, Docker, Linux
- Test Driven Development, Continuous Integration, Agile
- Design patterns
- MySQL - MongoDB

## LANGUAGES

- Français: Native language
- English: Spoken, written and read

## HOBBIES

- Bouldering
- Video games
- Cooking and listening to music.
- Self-hosting web services for the sake of it.

## EDUCATION

### Machine Learning

#### Professional Master's Degree

May 2020 Mila/Universite de Montreal

### Software Engineering

#### Bachelor's Degree

2018 Polytechnique de Montreal

## ACHIEVEMENT

### AI Driving Olympics - Neurips 2019

- Winner of the Lane Following with other vehicles category
- Second place in the Lane Following category

## PROJECTS

### HDR image generation with deep learning



- The project was a completely reimplementing using Python and Pytorch of the experiment described in this [paper](#). The experiment consisted in fusing three ordinary images (Low Dynamic Range) of different exposition time from the same scene in one HDR image. For this reason, an optic flow algorithm was used to align the lowest and highest exposition on the normal exposition image. Then, a convolutional network was used to model the fusing process.

### Recognizing tree species from patches of forests

- For a project class done during my master, in team, we worked on a project proposed by Horoma. It consisted in identifying tree species from 21 different ones based on image patches from a forest. We had only access to a very small labeled dataset and a big unlabeled one. Using autoencoders, we leverage the unlabeled data to learn differentiating features and create clusters representing each species. Then, using K-mean and the labeled data, we identified each cluster. Our model was the best from all the teams working on the project.

### Online Driving Robot Simulator

- For my third project class during my undergrad studies, we had to port a driving game, made during the second year on Windows in C++, to iPad and add a networking component. The latter entailed being able to edit map a la Google Doc and having multiple players driving on it at the same time. The iPad application also had to work online. I lead the team that worked on the iPad application where we had to redo the whole application back-end in Swift and create a new front-end. I also implemented an instant messaging system for the iOS application.

Please visit my website for more. [↗](#)