Étienne Pepin

Languages:
English and French

etienne.pepin78@gmail.com
Portfolio: petienn.github.io

Education

Doctorate in Engineering (non-completed) *(École de Technologie Supérieure, Montréal)* 2022 - 2023
Data Analysis - Machine Learning - Probability Theory - Clustering - Python

Master in Automated Manufacturing Engineering with Thesis *(ÉTS)* 2018 - 2020
Computer Vision - Machine Learning - Probability Theory - Python

Bachelor of Automated Manufacturing Engineering *(ÉTS)* 2016 - 2018

Relevant Experience

Researcher (Scholarship) 2019 - 2020
Simulation and digital health, National Research Council Canada *Boucherville, Qc*

- Develop a segmentation procedure for CT images of the torso, based on a Dense-Vnet.

Laboratory Instructor 2020, 2022
École de Technologie Supérieure *Montreal, Qc*

- Prepare, deliver and grade laboratories for a master's level computer vision class.

Software Developer (Internship) 2018
Teledyne Dalsa *Montreal, Qc*

- Develop a C# library to control precisely a cart used in laser 3D scanning.
- Create and code a communication and control protocol between a C# application and an Arduino.

Research

Distance Distribution Estimation from Nearest Neighbors 2022-2023
Doctorate's Research

Develop a distance distribution parameter estimation algorithm based on order statistics. This algorithm is used for locally adaptive clustering, among other uses.

Keypoint Masking for Analyzing Segmented Medical Image Data 2020
Master's Thesis *available on portfolio*

Develop a procedure to limit noise associated with keypoints extracted from a masked image. This procedure is based on Gaussian filters' properties.

Large-Scale Unbiased Neuroimage Indexing 2020
Refereed publications in conference proceedings, based on the thesis, MLCN 2020 *available on portfolio*

Skills

Machine Learning

Deep learning, transfer learning, regression, classification, convolutive networks, clustering, Dense-Vnet for medical segmentation

Computer Vision

Pre-processing, feature extraction, image analysis, detection and segmentation, medical imaging, 3D SIFT-Rank keypoints, multidimensional Gaussian filters

Software

Languages: Python, C#, MATLAB, C, SQL, C++, Arduino
Librairies: Numpy, SciPy, Pandas, OpenCV, TensorFlow, NiftyNet

Mathematics

Probability theory, statistics, distance distributions in high dimensions, nearest neighbors