

Étienne Pepin

Languages:
English and French

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

RELEVANT EXPERIENCE

École de Technologie Supérieure

Laboratory Instructor for a computer vision class

2020, 2022

Montréal, Qc

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

National Research Council Canada

Computer Vision Researcher

2019 - 2020

Boucherville, Qc

- Create an automatic process to clean, validate, and align medical 3D images.
- Develop a segmentation procedure for images of the torso based on state-of-the-art deep learning methods.

Teledyne Dalsa

Software Developer

2018

Montréal, Qc

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

EDUCATION

Doctorate's studies

Develop a clustering algorithm for data in high dimensions.

2022 - 2023

École de technologie supérieure (ÉTS)

Master in Automated Manufacturing Engineering with Thesis

Research in medical imaging with studies in artificial vision, deep learning, and mathematics.

2018 - 2020

ÉTS

Bachelor of Automated Manufacturing Engineering

With a focus on intelligent systems.

2016 - 2018

ÉTS

RESEARCH PUBLICATION

Étienne Pepin. (2025). Local Cluster Cardinality Estimation for Adaptive Mean Shift. <https://arxiv.org/pdf/2508.12450>.

- Designed a local parameter estimator that improves the mean shift algorithm, using insights from PhD studies.
- Outperformed a recent adaptive mean shift method and, in some cases, the EM algorithm on real-world datasets.

Étienne Pepin, Jean-Baptiste Carlier, Laurent Chauvin, Matthew Toews and Rola Harmouche. (2020). Large-Scale Unbiased Neuroimage Indexing via 3D GPU-SIFT Filtering and Keypoint Masking. *Machine Learning in Clinical Neuroimaging and Radiogenomics in Neuro-oncology*. https://doi.org/10.1007/978-3-030-66843-3_11

SKILLS

Software

Languages: Python, C#, MATLAB, C, SQL, C++.

Libraries: Numpy, scikit-learn, SciPy, Pandas, OpenCV, TensorFlow, PyTorch.

Programs: Microsoft Office, GitHub.

Machine Learning

Deep learning, transfer learning, classification, convolutive networks, supervised and unsupervised learning.

Computer Vision

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

Mathematics

Probability theory, statistics, distance distributions in high dimensions.