Étienne Pepin

Languages:
English and French

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

Education

Master's Degree in Automated Manufacturing Engineering 2018 - 2020
École de technologie supérieure (ÉTS) *Montreal, Qc*

Bachelor of Automated Manufacturing Engineering 2016 - 2018
École de technologie supérieure (ÉTS) *Montreal, Qc*

Studies in Mechanical Engineering 2012 - 2015
École de technologie supérieure (ÉTS) *Montreal, Qc*

Associate's Degree in Engineering Technologies 2008 - 2011
CÉGEP André-Laurendeau *Montreal, Qc*

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
École de Technologie Supérieure *Montreal, Qc*

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

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

- Code a C# library to control precisely a cart used in laser 3D scanning
- Create and code a communication protocol between a C# software and an Arduino enabling full control over the Arduino from a computer

Research

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

Analysis of keypoint extraction on masked images resulting in an extraction procedure limiting masking related noise. The procedure is supported by a theorical model valid for images of any dimensions. The model includes a proof that intensity displacement due to Gaussian filtering follows the Chi distribution.

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

Skills

Deep learning
Master's level courses: basics, convolutive and recurent networks (MLP, CNN, UNET, GAN), detection and segmentation
Research: dense Vnet for medical segmentation, Gaussian distribution in high dimensional spaces

Computer Vision
Master's level courses: computer vision and medical imaging
Research: 3D SIFT-Rank keypoints, dense Vnet and multidimensional Gaussian filters

Software
Languages: Python, C#, MATLAB, C, C++, Arduino
Libraries: OpenCV, SciPy, Pandas, TensorFlow, NiftyNet, Keras

Mathematics
probability theory, linear algebra