

Trong N. Nguyen

SENIOR SOFTWARE ENGINEER & AI DEVELOPER

5605 Avenue de Gaspé, Montreal QC H2T 2A4, Canada

✉ ntnguyen.dn@gmail.com | 🌐 www.nguyetn89.com | 📱 nguyetn89 | 📧 nguyetn89

Summary

Good knowledge in **computer vision** and **machine learning**. Having experience in building **deep learning** models for Vision/NLP tasks, designing **microservices** and maintaining **system infrastructure**. Great **passion** for **machine intelligence** and **resource optimization**.

Work Experience

Koios Intelligence

SOFTWARE ENGINEER & AI DEVELOPER

Montreal, QC, Canada

Jan. 2021 - Present

- Design and implement deep neural networks for Natural Language Processing.
- Optimize consumed resources for products running on multiple environments.
- Build clusters and manage microservices as well as system operations.
- Design software interfaces for integrating 3rd-party APIs into products' cores

DIRO, University of Montreal (UdeM)

POST-DOCTORAL RESEARCHER

Montreal, QC, Canada

Jan. 2020 - Jan. 2021

- Designed deep neural networks for anomaly detection in surveillance videos.
- Built a system of motion evaluation supporting elderly under in-home environment.
- Published papers indicating these works in conferences and/or journals.
- Advised students in research involving human gait analysis using computer vision.

Danang University of Science and Technology

RESEARCH ASSISTANT

Danang, Vietnam

Jul. 2014 - Aug. 2015

- Developed algorithms for recognizing hand gestures in both static and dynamic forms.
- Performed data acquisition for hand gestures (in binary and depth representations).
- Published papers and gave presentations in scientific conferences.
- Advised students working on other vision-related projects in the laboratory.

DIRO, University of Montreal (UdeM)

STUDENT INTERN

Montreal, QC, Canada

Mar 2014 - Jun. 2014

- Proposed and implemented an algorithm for gait analysis using a color camera.
- Performed data acquisition for multiple walking gait types.
- Published papers and gave presentations in scientific conferences.

Education

DIRO, University of Montreal (UdeM)

PH.D. IN COMPUTER SCIENCE

Montreal, QC, Canada

Sep. 2015 - Dec. 2019

- Designed a 3D reconstruction system consisting of a depth camera and two mirrors.
- Proposed algorithms reducing depth distortion caused by the Time-of-Flight depth estimation and mirrors.
- Performed data acquisition and gait analysis on 3D point clouds representing human walking gaits.
- Worked on side project of anomaly detection using deep learning.

The University of Danang (UD)

M.Sc. IN COMPUTER SCIENCE

Danang, Vietnam

Dec. 2012 - Jan. 2015

- Worked on typical image processing and machine learning algorithms.
- Performed human gait assessment based on sequence of 2D silhouettes.
- Built hidden Markov models representing the transition of postures within a gait cycle.

Danang University of Science and Technology

B.Sc. IN INFORMATION TECHNOLOGY

Danang, Vietnam

Sep. 2007 - Jun. 2012

- Designed hand-crafted features from images and worked on vanilla neural networks.
- Developed an application for detecting fake-folder computer viruses based on their icons.

Skills

Libraries/Tools PyTorch, TensorFlow, OpenCV, Caffe, Scikit-learn, Git, Unity, Point Cloud Library
Programming Python, MATLAB, C++, C#, Mathematica
Languages Vietnamese, English, French (basic)
Others Kubernetes, Google Cloud Platform, CI/CD, Debugging, Networking

Honors & Awards

2019	Annual , Scholarship for end of doctoral study	<i>FESP, University of Montreal</i>
2019	Winter semester , Scholarship for excellent academic record	<i>DIRO, University of Montreal</i>
2018	Winter & Fall , Scholarship for excellent academic record	<i>DIRO, University of Montreal</i>
2017	Winter & Fall , Scholarship for excellent academic record	<i>DIRO, University of Montreal</i>
2016	Winter & Fall , Scholarship for excellent academic record	<i>DIRO, University of Montreal</i>
2015	Fall semester , Scholarship for excellent academic record	<i>DIRO, University of Montreal</i>
2012	Third prize , The 8th Scientific Research Contest for students	<i>The University of Danang</i>

Invited Reviewer

Journal **IEEE**, Transactions on Neural Networks and Learning Systems
Journal **IEEE**, Transactions on Neural Systems and Rehabilitation Engineering
Journal **Elsevier**, Computer Vision and Image Understanding
Journal **Elsevier**, Journal of Visual Communication and Image Representation
Journal **Elsevier**, Journal of Biomechanics
Journal **Springer**, SN Applied Sciences

Selected Publications

SmithNet: Strictness on Motion-Texture Coherence for Anomaly Detection <i>Trong-Nguyen Nguyen</i> , Sébastien Roy and Jean Meunier	IEEE TNNLS 2021 paper GitHub
Anomaly Detection in Video Sequence with Appearance-Motion Correspondence <i>Trong-Nguyen Nguyen</i> and Jean Meunier	ICCV 2019 paper arXiv GitHub demo
Hybrid Deep Network for Anomaly Detection <i>Trong-Nguyen Nguyen</i> and Jean Meunier	BMVC 2019 paper arXiv GitHub demo slides
Applying Adversarial Auto-encoder for Estimating Human Walking Gait Abnormality Index <i>Trong-Nguyen Nguyen</i> and Jean Meunier	PAA (Springer), 2019 paper arXiv GitHub
Estimation of Gait Normality Index based on Point Clouds through Deep Auto-Encoder <i>Trong-Nguyen Nguyen</i> and Jean Meunier	JIVP (Springer), 2019 paper GitHub
Measurement of Human Gait Symmetry using Body Surface Normals Extracted from Depth Maps <i>Trong-Nguyen Nguyen</i> , Huu-Hung Huynh and Jean Meunier	Sensors (MDPI), 2019 paper
Human Gait Symmetry Assessment using a Depth Camera and Mirrors <i>Trong-Nguyen Nguyen</i> , Huu-Hung Huynh and Jean Meunier	CBM (Elsevier), 2018 paper arXiv
3D Reconstruction With Time-of-Flight Depth Camera and Multiple Mirrors <i>Trong-Nguyen Nguyen</i> , Huu-Hung Huynh and Jean Meunier	IEEE Access (IEEE), 2018 paper dataset
Matching-based Depth Camera and Mirrors for 3D Reconstruction <i>Trong-Nguyen Nguyen</i> , Huu-Hung Huynh and Jean Meunier	SPIE 2018 paper arXiv
Assessment of Gait Normality using a Depth Camera and Mirrors <i>Trong-Nguyen Nguyen</i> , Huu-Hung Huynh and Jean Meunier	BHI 2018 paper arXiv

Skeleton-based Gait Index Estimation with LSTMs

Trong-Nguyen Nguyen, Huu-Hung Huynh and Jean Meunier

ICIS 2018

[paper](#) | [arXiv](#) | [GitHub](#)

Estimating Skeleton-Based Gait Abnormality Index by Sparse Deep Auto-Encoder

Trong-Nguyen Nguyen, Huu-Hung Huynh and Jean Meunier

ICCE 2018

[paper](#) | [arXiv](#) | [GitHub](#)

Skeleton-based Abnormal Gait Detection

Trong-Nguyen Nguyen, Huu-Hung Huynh and Jean Meunier

Sensors (MDPI), 2016

[paper](#) | [GitHub](#)

Geometry-based Static Hand Gesture Recognition using Support Vector Machine

Trong-Nguyen Nguyen, Duc-Hoang Vo, Huu-Hung Huynh and Jean Meunier

ICARCV 2014

[paper](#)

Extracting Silhouette-based Characteristics for Human Gait Analysis using One Camera

Trong-Nguyen Nguyen, Huu-Hung Huynh and Jean Meunier

SoICT 2014

[paper](#)