SOHAIB LARABA

sohaib.laraba@gmail.com
sohaiblaraba.github.io
Mons, Belgium
+32 466 274 122

EDUCATION

2014 - 2020
Doctor of Philosophy - *University of Mons - Belgium*
Thesis: *Deep Learning-based Human Action Recognition: We propose a novel spatio-temporal representation of 2D and 3D motion capture sequences and an end-to-end framework for the recognition of human actions.*
Advisors: *Prof. Thierry Dutoit & Dr. Joëlle Tilmanne*

2012 - 2013
Master of Science - *Grenoble INP Institute of Engineering - France*
Thesis: *3D Point Clouds Segmentation: Implementation of a simple framework for object segmentation from 3D point clouds obtained from the Kinect sensor.*
Advisors: *Prof. Gang Feng, Dr. José-Ernesto Gomez-Balderas*

2007 - 2012
Bachelor of Engineering - *National Polythechnic School of Algiers - Algeria*
Electronics.
Thesis: *Intelligent information retrieval modelisation using latent sementic indexing and image processing*
Advisors: *Prof. Cherif Larbes, Dr. Ali Allali*

WORK EXPERIENCE

2022 - Now
AI Consultant, VELMENI
Velmeni is a Silicon Valley startup that provides an AI-based solution for automated diagnostics of dental radiographs. My mission is to use computer vision technology for teeth segmentation and pathology detection from different types of dental x-ray images. Leading a team of researchers for data analysis, model training and evaluation. Patents and research papers writing. USA FDA clearance writing.

2020 - Now
Post Doctoral Fellow, *Information Signal and Artificial Intelligence Lab.*
Research and development in the area of motion capture, computer vision and deep learning. Leader of the motion sensing team (DigiSense). Development of national and European project around artifial intelligence for real-life applications. Supervision of PhD students.
Reference: Prof. Thierry Dutoit

2014 - 2020
Research Assistant, *Information Signal and Artificial Intelligence Lab.*
Research and development in the area of motion capture, computer vision and deep learning.
Reference: Prof. Thierry Dutoit

2019 - 2020
Teaching Assistant, University of Mons - UMONS
Visual Processing and Smart Spaces

COMPUTER SKILLS

Advanced
Python, C, C++, Matlab, OpenCV, Anaconda, Pytorch, Tensorflow, Keras, Qt, Linux, Windows, LATEX.

Intermediate
C#, JAVA, R, CUDA, AWS, HTML, CSS, SQL, PhotoShop

MAIN PUBLICATIONS

Towards Lightweight Neural Animation: Exploration of Neural Network Pruning in Mixture of Experts-based Animation Models
Antoine Maiorca, Nathan Hubens, Sohaib Laraba, Thierry Dutoit
11/2022 - arXiv preprint arXiv:2201.04042.

Wheat Diseases Classification and Localization Using Convolutional Neural Networks and GradCAM Visualization
Elias Ennadifi, Sohaib Laraba, Damien Vincke, Benoît Mercatoris, and Bernard Gosselin
06/2020 - International Conference on Intelligent Systems and Computer Vision

Leveraging Pre-Trained CNN Models For Skeleton-Based Action Recognition
Sohaib Laraba, Joëlle Tilmanne, Thierry Dutoit
09/2019 - International Conference in Computer Vision Systems

An Adaptive Framework for the Creation of Exergames for Intangible Cultural Heritage (ICH) Education
Athina Grammatikopoulou, Sohaib Laraba, ..., Nikos Grammalidis
2019 - Journal of Computers in Education

Action recognition based on 2D skeletons extracted from RGB videos
Sophie Aubry, Sohaib Laraba, Joëlle Tilmanne, Thierry Dutoit
2019 - MATEC Web of Conferences

People Groups Analysis for AR Applications
Matei Mancas, Sohaib Laraba, Alessandra Bandrabur, P-H De Deken, Kaori Hagihara, Nicolas Leblanc, SB Yengec Tasdemir, Benoît Macq, Thierry Dutoit
2018 - International Conference on 3D Immersion

UMONS-TAICHI: A Multimodal Motion Capture Dataset of Expertise in Taijiquan Gestures
Mickael Tits, Sohaib Laraba, Eric Caulier, Joëlle Tilmanne, Thierry Dutoit
2018 - International Conference on 3D Immersion

Deep Learning for Plant Diseases: Detection and Saliency Map Visualisation
Mohammed Brahimi, Marko Arsenovic, Sohaib Laraba, Srdjan Sladojevic, Kamel Boukhalfa, Abdelouhab Moussaoui
2018 - Human and Machine Learning

An Adaptive Framework for the Creation of Bodymotion-Based Games
Athina Grammatikopoulou, Sohaib Laraba, Ozan Sahbenderoglu, Kosmas Dimitropoulos, Nikolaos Grammalidis
2017 - International Conference on Virtual Worlds

3D Skeleton-Based Action Recognition by Representing Motion Capture Sequences as 2D-RGB Images
Sohaib Laraba, Mohammed Brahimi, Joëlle Tilmanne, Thierry Dutoit
2017 - International Conference on Virtual Worlds

The i-treasures Intangible Cultural Heritage Dataset
Nikolaos Grammalidis, Kosmas Dimitropoulos, ..., Sohaib Laraba, Sotiris Manitsaris

2016 - International Symposium on Movement and Computing

Dance Performance Evaluation Using Hidden Markov Models
Sohaib Laraba, Joëlle Tilmanne
2016 - Computer Animation and Virtual Worlds

Adaptation Procedure for HMM-Based Sensor-Dependent Gesture Recognition
Sohaib Laraba, Joëlle Tilmanne, Thierry Dutoit
2015 - ACM SIGGRAPH Conference on Motion in Games

**OTHER
INFORMATION**

Talks

The Hands on deep learning workshop 2018: *Basics and tools of computer vision and deep learning*

Hand on AI Certificate 2019: *Co-creator of the "Hands on AI" University certificate. From basics to advanced projects in computer vision and deep learning. Teaching and supervision.*
Reference: Prof. Thierry Dutoit

Workshops

Enterface 2014 - Bilbao, Spain
Exploring stylistics of expert gestures and singing voice with motion capture and reactive statistical mapping

Enterface 2015 - Mons, Belgium
Prototyping a New Audio-Visual Instrument Based on Extraction of HighLevel Features on Full-Body Motion

Enterface 2017 - Porto, Portugal
Big Brother can you find, classify, detect and track us ? - Building a system that can detect, recognize objects or humans and describe them as much as possible on videos

Enterface 2018 - Louvain-la-Neuve, Belgium
Augmented Crowd - Developping an application for people groups analysis for AR applications

ShakeUP : *Workshops during which entrepreneurs are invited to benefit from a tailor-made support*
2017: *Developping a DL-based model for automatic trash sorting*

Hackathon Citizens of Wallonia 2019: *Winners of the AI prize for developing a platform for automatically detect plant diseases from images (farmy.ai)*

Languages

Arabic - Native

English - Fluent (near native)

French - Fluent (near native)

Interests

Football, Biking, Hiking, DIY, Gardening, Traveling

REFERENCES

Prof. Thierry Dutoit
ISIA Lab., Mons, Belgium
thierry.dutoit@umons.ac.be

Dr. Matei Mancas
ISIA Lab., Mons, Belgium
matei.mancas@umons.ac.be

Prof. Said Mahmoudi
ILIA Lab., Mons, Belgium
said.mahmoudi@umons.ac.be

Prof. Sidi Mahmoudi
ILIA Lab., Mons, Belgium
sidi.mahmoudi@umons.ac.be

Dr. Mohammed Brahimi
Assistant Lecturer
Mohamed El Bachiri El Ibrahimi University
Bordj Bou Arreridj, Algeria
m_brahimi@esi.dz