Hazem Wannous

Associate Professor of Computer Science

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PROFILE

Associate professor in Computer Science with extensive experience in human behaviour understanding, human-computer-interaction, virtual reality and machine learning.

Academic Background

Dec. 2018 **HDR in "Computer Sciences", (qualified in 2018 for a professor position in section 27 and 61))**, University of Lille, France.
Title: Towards Understanding Human Behavior by by Time-Series Analysis of 3DMotion"

Dec. 2008 **Ph.D. in Computer Science (Image processing and computer vision)**, PRISME Laboratory, University of Orleans, France.
Title: Multi view Classification of Color Regions – Application to the 3D Assessment of Chronic Wounds

June 2005 **M.Sc (Master Professionnel)**, *in Image, vision and artificial intelligence*, Le2i Laboratory, University of Burgandy, France.

June 2003 **M.Sc (DEA)**, *in Image processing and vision for robotics*, LASMEA Laboratory, University of Clermont-Ferrand, France.

EMPLOYMENT

Since Dec. 2010 **Associate Professor**, University of Lille.
IMT Lille Douai (Ex. Télécom Lile), department of Computer Science, Lille, France

2009 – 2010 **Research engineer**, Institut Polytechnique de Bordeaux, University Bordeaux 1.
France

2008 – 2009 **Assistant professor**, Ecole Polytechnique, Orleans University.
Orleans, France

RESEARCH ACTIVITIES

Ph.D. ADVISING.

October 2018 **Théo Voillemin** , "Personalized augmented reality assistance by hand gesture
September 2021 recognitionusing head-mounted displays", University of Lille and IMT Lille Douai (CRIStAL – UMR 9189), Lille, France.

October 2014 **Quentin De Smedt** , "Dynamic Hand Gesture Recognition - from Traditional
September 2017 Handcrafted torecent Deep Learning Approaches", University of Lille (CRIStAL – UMR 9189), Lille, France.

February 2012 **Maxime Devanne**, "3D Human Activity Recognition from RGB-D cameras", Uni-
January 2015 versity of Lille 1 (CRIStAL – UMR 9189), Lille, France.

November 2011 **Rim Slama**, "3D human motion analysis", University of Lille (CRIStAL – UMR
October 2014 9189), Lille, France.

MASTER'S ADVISING.

February 2019 **Vivien Bernard**, "Human-machine-interaction modulated by eye tracking", IMT
August 2019 Lille Douai (CRIStAL – UMR 9189.

February 2018 August 2018	**Denis Balschakov**, "Deep Learning Approach for Prediction of Atmospheric Pollutants", IMT Lille Douai (CRIStAL – UMR 9189.
April 2017 Sep. 2017	**Manel Rhif**, "Action Recognition from Skeleton Sequences using Convolutional NeuralNetwork on Lie Group Manifold", University of Lille (CRIStAL – UMR 9189.
Feb. 2016 Aug. 2016	**Elliot Vanegue**, "An Interactive Approach to Semantic Segmentation of 3D Objects Retrieval", University of Lille (CRIStAL – UMR 9189), Lille, France.
February 2013 August 2012	**Maxime Devanne**, "3D Human body modeling by Kinect camera", University Lille 1 (CRIStAL – UMR 9189), Lille, France.

MOST SIGNIFICANT PUBLICATIONS (REVUES)

- S. RIBET, H. WANNOUS, and J.-P. VANDEBORRE. "Survey on Style in 3D Human Body Motion: Taxonomy, Data, Recognition and its Applications". In **IEEE Transactions on Affective Computing** (Accepted in March 3, 2019), 2019.
- Q. DESMEDT, H. WANNOUS, and J.-P. VANDEBORRE. "Heterogeneous hand gesture recognition using 3D dynamic skeletal data". In: **Computer Vision and Image Understanding** (In Press, Corrected Proof, Available online 14 February 2019), 2019. DOI: 10.1016/j.cviu.2019.01.008.
- M. DEVANNE, S. BERRETTI, P. PALA, H. WANNOUS, M. DAOUDI, and A. D. BIMBO. "Motion segment decomposition of RGB-D sequences for human behavior understanding". In: **Pattern Recognition** 61, 2017, pp. 222–233. ISSN: 0031-3203. DOI: 10.1016/j.patcog.2016.07.041.
- R. SLAMA, H. WANNOUS, M. DAOUDI, and A. SRIVASTAVA. "Accurate 3D action recognition using learning on the Grassmann manifold". In: **Pattern Recognition** 48 (2), Feb. 2015, pp. 556–567.
- R. SLAMA, H. WANNOUS, and M. DAOUDI. "3D human motion analysis framework for shape similarity and retrieval". In: **Image and Vision Computing** 32 (2), 2014, pp. 131–154. ISSN: 0262-8856. DOI: 10.1016/j.imavis.2013.12.011.
- M. DEVANNE, H. WANNOUS, S. BERRETTI, P. PALA, M. DAOUDI, and A. DEL BIMBO. "3D Human Action Recognition by Shape Analysis of Motion Trajectories on Riemannian Manifold". In: **IEEE Transactions on Cybernetics** 45 (7), 2014, pp. 1340–1352. ISSN: 2168-2267. DOI: 10.1109/TCYB.2014.2350774.
- H. WANNOUS, Y. LUCAS, S. TREUILLET, A. MANSOURI, and Y. VOISIN. "Improving color correction across camera and illumination changes by contextual sample selection". In: **Journal of Electronic Imaging** journal 21 (2), June 2012, pp. 023015-1–023015-14. DOI: 10.1117/1.JEI.21.2.023015.
- H. WANNOUS, Y. LUCAS, and S. TREUILLET. "Enhanced Assessment of the Wound- Healing Process by Accurate Multiview Tissue Classification". In: **IEEE Transactions on Medical Imaging** 30 (2), 2011. 12 Pages, pp. 315–326. DOI: 10.1109/TMI.2010.2077739.
- H. WANNOUS, S. TREUILLET, and Y. LUCAS. "Robust tissue classification for reproducible wound assessment in telemedicine environments". In: **Journal of Electronic Imaging** 19, 2 Feb. 2010. DOI: 10.1117/1.3378149.

TEACHING EXPERIENCE

Since December 2010	**IMT Lille Douai**, Big Multimedia, Data Sciences, 3D reconstruction, Human-machine interaction, Programming language, Algorithmic. Lille, France
October 2009 Sebtember 2010	**ENSEIRB-MATMECA**, Stereo-vision, 3D reconstruction. Bordeaux, France
September 2008 Octobre 2009	**Ecole Polytechnique Orléans University**, C++ languages, 3D vision, Orleans, France.
Fall 2006 Spring 2008	**Ecole Nationale Superieur d'Ingenieur (ENSI)**, Microprocessor, 3D vision. Bourges, France

RESPONSABILITIES

Since 2012	**3D digital entertainment technologies**. 5th year IMT Lille Douai (120h)

Since 2015	**Image processing on mobile terminal**.
	4th year E-Learning IMT Lille Douai (120h)
From 2019	**Big Multimedia Data**.
	5th year IMT Lille Douai (90h)
From 2019	**Co-responsible of creation of a Specialized Master in "Data Science and Applications"**.
	IMT Lille Douai

LEADING AND STEERING ACTIVITIES

- Co-organizer and General Chair of "3D Shape Retrieval Contest 2017 3D Hand Gesture Recognition Using a Depth and Skeletal Dataset SHREC2017", Lyon, April 23-24, 2017
- Co-organizer and General Chair of "International Workshop on Understanding Human Activities through 3D Sensors (UHA3DS'16)", in conjunction with international conference ICPR, Cancun, Mexico, December 4-8 2016
- Co-organizer and General Chair of the "International Workshop on Understanding Human Activities through 3D Sensors (UHA3DS'15), in conjonction with IEEE-FG, Ljubljana, Slovenia, May 4-8 2015.
- Area Chair of the IAPR International Conference on Pattern Recognition (Pattern Recognition Applications Track), 24-28 August 2014 Stockholm, Sweden.
- Member of the organization committee of "Shape Modeling International conference" (SMI 2015), Telecom Lille June 24-26 2015.
- Member of the organization committee of French national conference "COmpression et REprésentation des Signaux Audiovisuels" CORESA 2012, Lille.
- Member of the program committee of Eurographics Workshop on 3D Object Retrieval 2014 and 2015.
- Member of the program committee of International Workshop on Social Behaviour Analysis 2013.

SEMINARS AND INVITED TALKS

- March 6, 2019: Human Motion Analysis in Depth Images - From Traditional Geometric Towards Deep Learning Approaches, invited seminar (by Prof. Anuj Srivastava) *Statistical Shape Analysis and Modeling Group (SSAMG)*, Florida State University, USA.
- February 26, 2019: Dynamic Hand Gesture Detection and Recognition from Depth Sequences by a Deep Learning Approach, invited seminar (by Prof. Mubarak Shah) *Center for Research in Computer Vision (CRCV)*, University of Central Florida, USA.
- September 21, 2018: Online hand gesture recognition using combined convolutional and recurrent networks, invited seminar *Sequel team*, INRIA Lille, France.
- January 31, 2018: 3D Human motion analysis from RGBD sensors, invited seminar in workshop on motion capture organized by TCTS team, University of Mons, Belgium.
- February 22, 2016: Shape analysis of human motion and Pose, seminar at NUMEDIART Institute, University of Mons, Belgium.
- December 11, 2014: Approche géométrique pour la reconnaissance d'actions humaines à partir d'un capteur RGB-D, Journée GDR-ISIS "Action Visage, geste, action et comportement
- January 21, 2011: Localisation 3D en environnement intérieur par caméra portée pour la détection d'événements liés aux activités, Journée GDR-ISIS Suivi d'objets dans l'espace 3D: méthodes et applications
- April 02, 2009: Conception d'un outil complet d'aide au diagnostic clinique: de l'application à la classification couleur multi-vues, Journée GDR ISIS du groupe SCATI : Les Systèmes de Vision: de l'acquisition à l'interprétation
- January 09, 2017: Classification tissulaire robuste appliquée au suivi thérapeutique d'escarres", école d'hiver sur l'imagerie numérique couleur, Campus du Futuroscope, Université de Poitiers
- September 28, 2006: Evaluation et réglage d'une chaîne de traitement d'images routiéres, Journée bilan du groupe SCATI : chaîne et pilotage de traitements GdR ISIS