Djamila Aouada | Research Scientist, Head of SIGCOM CV Lab

Personal

Date of birth: November 10, 1982 Married, 1 child
Citizenship: Luxembourgish, Algerian, and Russian.
Webpage: https://wwwen.uni.lu/snt/people/djamila_aouada

Employment History

University of Luxembourg, SnT Centre **Luxembourg, Luxembourg**
Research Scientist *07/2013 – present*
Head of the Computer Vision Team within the SIGCOM Group
Maternity leave *08/2015 – 02/2016*
Université de Bourgogne, Le2i **Le Creusot, France**
Lecturer *10/2012 – present*
Mitsubishi Electric Research Laboratories (MERL) **Cambridge, MA, USA**
Consultant *10/2014 – 03/2015*
University of Luxembourg, SnT Centre **Luxembourg, Luxembourg**
Research Associate *11/2009 – 06/2013*
University of Chicago, Dept. Of Radiology **Chicago, IL, USA**
Postdoctoral Fellow *06/2009 – 08/2009*
North Carolina State University, ECE Dept. **Raleigh, NC, USA**
Research Assistant *08/2005 –05/2009*
Alcatel-Lucent Bell Laboratories **Murray Hill, NJ, USA**
Consultant *07/2008 – 10/2008*
North Carolina State University, ECE Dept. **Raleigh, NC, USA**
Teaching Assistant *01/2008 –05/2008*
Los Alamos National Laboratory **Los Alamos, NM, USA**
Research Intern *06/2007 –08/2007*
Schlumberger, Oil-field Services **Baku, Azerbaijan**
Field Engineer Intern *08/2004 –09/2004*
North Carolina State University, ECE Dept. **Raleigh, NC, USA**
Teaching Assistant *01/2008 –05/2008*
Centre de Développement des Technologies Avancées (CDTA) **Algiers, Algeria**
Research Intern *07/2003 –08/2003*

Education

North Carolina State University **Raleigh, NC, USA**
PhD, Electrical Engineering *08/2005 –05/2009*
Thesis: Geometric, statistical and topological modeling of intrinsic data manifolds: Application to 3D shapes
Supervisor: Prof. Hamid Krim, IEEE Fellow
Ecole Nationale Polytechnique **Algiers, Algeria**
Diplôme d'Ingénieur d'État, Electronics *09/2000 –06/2005*
Thesis: Exploitation of Blind Techniques in MIMO-OFDM Communication Systems
Supervisor: Prof. Adel Belouchrani, IEEE Senior

Five Most Important Publications (complete list on webpage)

1. H. Afzal, D. Aouada, B. Mirbach, B. Ottersten, "Full 3D Reconstruction of Non-Rigidly Deforming Objects", ACM Transactions on Multimedia Computing, Communications, & Applications (TOMM), 2018
2. G. Demisse, D. Aouada, B. Ottersten, "Deformation Based Curved Shape Representation", IEEE Transactions on Pattern Analysis & Machine Intelligence (TPAMI), 2017.
3. K. Al Ismaeil, D. Aouada, T. Solignac, B. Mirbach, B. Ottersten, "Real-Time Enhancement of Dynamic Depth Videos with Non-Rigid Deformations", IEEE Transactions on Pattern Analysis & Machine Intelligence (TPAMI), 2016.
4. A. C. Bahnsen, D. Aouada, B. Ottersten, "Example-Dependent Cost-Sensitive Decision Trees", Elsevier Journal in Expert Systems with Applications, 2015.
5. D. Aouada, H. Krim, "Squigraphs for Fine and Compact Modelling of 3-D Shapes", IEEE Transactions on Image Processing, 2009.

Ten Most Recent Publications (complete list on webpage)

1. Papadopoulos, Konstantinos; Antunes, Michel; Aouada, Djamila; Ottersten, Björn, "A Revisit of Action Detection using Improved Trajectories", in IEEE International Conference on Acoustics, Speech and Signal Processing, Calgary, Alberta, Canada, 15–20 April 2018
2. Afzal, Hassan; Aouada, Djamila; Mirbach, Bruno; Ottersten, Björn, "Full 3D Reconstruction of Non-Rigidly Deforming Objects", in ACM Transactions on Multimedia Computing, Communications, & Applications, 2018
3. O. Oyedotun, A. Shabayek, D. Aouada, B. Ottersten, "Improving The Capacity Of Very Deep Networks With Maxout Units", IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), April 2018
4. Demisse, Girum; Aouada, Djamila; Ottersten, Björn, "Deformation Based 3D Facial Expression Representation" in ACM Transactions on Multimedia Computing, Communications, & Applications, 2018
5. O. Oyedotun, A. Shabayek, D. Aouada, B. Ottersten, "Training Very Deep Networks via Residual Learning with Stochastic Input Connections", 24th International Conference on Neural Information Processing (ICONIP), 2017
6. O. Oyedotun, G. Demisse, A. Shabayek, D. Aouada, B. Ottersten, "Facial Expression Recognition via Joint Deep Learning of RGB-Depth Map Latent Representations", Chalearn Workshop on Action, Gesture, and Emotion Recognition: Large Scale

Multimodal Gesture Recognition and Real Versus Fake Expressed Emotions (ChaLearn), IEEE International Conference on Computer Vision Workshops (ICCVW), 2017
7. A. C. Correa, S. Villegas, D. Aouada, B. Ottersten, “Fraud Detection by Stacking Cost-Sensitive Decision Trees”, in Data Science for Cyber-Security (DSCS), 2017
8. A. Saint, A. Shabayek, D. Aouada, B. Ottersten, K. Cherenkova, G. Gusev, “Towards Automatic Human Body Model Fitting to a 3D Scan”, International conference and Exhibition on 3D Body Scanning and Processing Technologies (3DBody.Tech), 2017
9. G. Demisse, D. Aouada, B. Ottersten, “Deformation Based Curved Shape Representation”, IEEE Transactions on Pattern Analysis & Machine Intelligence (TPAMI), 2017. Impact Factor: 5.694
10. M. Antunes, J. Barreto, D. Aouada, B. Ottersten, “Unsupervised Vanishing Point Detection and Camera Calibration from a Single Manhattan Image with Radial Distortion”, IEEE International Conference in Computer Vision and Pattern Recognition (CVPR), 2017

Relevant Patents

1. Antunes, M., **Aouada, D**., Demisse, G. “Physical activity feedback”, International patent application PCT/EP2017/063559 .
2. Al Ismaeil, K., **Aouada, D.,** "Real-Time Temporal Filtering and Super-Resolution of Depth Image Sequences", WO Patent 193393, 2016.
3. Mirbach, B., Solignac, T., Garcia, F., **Aouada, D**., "Depth image enhancement method", US Patent 0235351, 2015.
4. Mirbach, B., Solignac, T., Garcia, F., **Aouada, D.,** "Depth image enhancement method", WO Patent 044569, 2014.

Distinctions, Awards, Achievements

2017: Best Paper Award, IEEE 2017 Fourth International Conference on Image Information Processing (ICIIP), under the Computer Vision Track.
2017: 2nd Place Best Paper Award at the IEEE International Conference on Image Processing (ICIP). Among 2400 submitted papers.
2015: Best Paper Award, IEEE Computer Vision and Pattern Recognition Workshop (CVPRW) on Multi-Sensor Fusion and Dynamic Scene Understanding (MSF)
2012: Co-founder of the Computer Vision Laboratory at SnT, as part of the SIGCOM group
2012: Established SnT as an associated partner of the Erasmus Mundus Master Program in VIsion & roBOTics (VIBOT). In this capacity, SnT became member of the VIBOT consortium. and is allowed to participate in the Academic/Management Board, to submit proposals for internships and MSc theses.
2011: Student Best Paper Award at IEEE International Symposium on Image and Signal Processing and Analysis (ISPA)
02/2009: PhD Defense at age 26
2005 – 2009: Full PhD Scholarship through North Carolina State University Graduate Student Support Plan (GSSP)
09/2008 – 05/2009: Research grant from the US Defense Threat Reduction Agency (DTRA)
03/2007 – 12/2007: Research grant from the US Office of Naval Research (ONR)
2003-2005: 2nd rank in Electronics at the École Nationale Polytechnique, the top engineering school in Algeria.
2000: 1st rank over the Province of Blida, Algeria, in the national Baccalaureate exam
2011-2018: Acknowledged in the media (The Scientist, The Guardian, Times Higher Education, RTL Radio, RTL TV)

Professional Service and Editorial Responsibilities

- **Member**: Institute of Electrical and Electronics Engineers IEEE, Institute for Systems and Technologies of Information, Control and Communication (INSTICC), IEEE Women in Engineering (WIE), IEEE Signal Processing Society (SPS), Eta Kappa Nu (HKN);
- **Chair**: IEEE Benelux Women in Engineering Affinity Group, 2014 – 2016;
- **Panelist**: IEEE AVSS 2014; VISAPP 2017;
- **Tutorial Presenter**: Université de Bourgogne; Binghamton University; VISAPP 2017;
- **Proposal Reviewer**: European H2020; Austrian Science Fund.
- **Technical Program Committee:** CVPR 2018, SmartMM 2018, SENSORDEVICES 2017, ICCE 2017, ICIAP 2017, VISAPP 2014-2018, ICDAR 2013-2017, VISUAL 2017, QU3ST 2012;
- **Journal Reviewer:** IEEE TIP; ACM TOMM; SigPro, Elsevier; JVCI, Elsevier; IET Computer Vision; CSDA, Elsevier; CVIU, Elsevier;

Key Research Projects

*Acting as PI. Acting as Vice PI where indicated with an asterisk *.*

2018-2021	Face Identification Under Deformations (IDform)	500 k€	FNR CORE PPP
2016-2019	3D Action Recognition Using Refinement and Invariance Strategies for Reliable Surveillance (3D-ACT)*	732 k€	FNR CORE
2011-2014	Fusion Approaches for Visual systems Enhancement (FAVE)*	693 k€	FNR CORE
2016-2019	Decision SupporT and self-mAnagement system for stRoke survivoRs (STARR)	4.36 M€	EU H2020
2016-2020	3D Shape Modelling	620 k€	ARTEC 3D
2013-2015	Body Shape Estimation via Intelligent Imaging*****	120 k€	Cubelux Sarl
2012-2016	Resilient Infrastructures for Financial Transactions*	1 M€	CETREL SIX
2011-2014	Multi-Sensor Fusion*	400 k€	IEE S.A.

PhD Supervision (FNR funded highlighted)

Ongoing

2018-today Kseniya Cherenkova, “Robust 3D face recognition”,
PhD Thesis Supervisor, SnT, University of Luxembourg
Funding scheme: Industrial

2017-today Ramiro Camino, “Data analytics for AML/KYC”
Member of the CET (PhD Supervisory Committee), SnT, University of Luxembourg
Funding scheme: Industrial

2017-today Jeremy Charlier, “Big data analytics for financial data”
Member of the CET (PhD Supervisory Committee), SnT, University of Luxembourg
Funding scheme: Industrial

2017-today Eman Ahmed, “Deep learning based 3D shape analysis”,
PhD Thesis Supervisor, SnT, University of Luxembourg
Funding scheme: **FNR CORE PPP**

2017-today Oyebade Oyedotun, “Scene flow from RGB-D: Applications in human motion sensing”,
PhD Thesis Supervisor, SnT, University of Luxembourg
Funding scheme: **FNR AFR**

2017-today Renato Baptista, “Context-based 3D action recognition”,
PhD Thesis Supervisor, SnT, University of Luxembourg
Funding scheme: H2020

2017-today Alexandre Saint, “3D human shape and pose modelling”,
PhD Thesis Supervisor, SnT, University of Luxembourg
Funding scheme: **FNR AFR PPP**

2016-today Konstantinos Papadopoulos, “Scene flow from RGB-D: Applications in human motion sensing”
PhD Thesis Supervisor, SnT, University of Luxembourg
Funding scheme: **FNR CORE**

Completed

2014-2017 Girum Demisse, “Deformation-based curved shape representation”
PhD Thesis Co-supervisor, SnT, University of Luxembourg
Current position: Research Associate, SnT, University of Luxembourg
Academic dissemination: 2 Journals, 3 Conferences, 1 Patent.

2012-2016 Hassan Afzal, “Full 3D reconstruction of dynamic non-rigid scenes: acquisition and enhancement”
PhD Thesis Co-supervisor, SnT, University of Luxembourg
Funding Scheme: **FNR CORE**
Current position: Researcher, *Leica Geosystems, HEXAGON*
Academic dissemination: 2 Conferences, 1 Journal, 1 Report.

2012-1015 Alejandro Correa Bahnsen, “Example-dependent cost-sensitive classification”,
PhD Thesis Co-supervisor, SnT, University of Luxembourg
Funding scheme: **FNR AFR PPP**
Current position: Chief Data Scientist, EasySolutions
Academic dissemination: 3 Journals, 4 Conferences, 1 Report.

2011-2015 Kassem Al Ismaeil, “Super-resolution approaches for depth video enhancement”,
PhD Thesis Co-supervisor, SnT, University of Luxembourg
Funding scheme: **FNR CORE**
Current position: Project Manager, Globality Munich Re
Academic dissemination: 2 Journals, 6 Conferences, 1 Patent, 1 IEEE Best Paper Award.

2008-2012 Frederic Garcia, “Sensor fusion combining 3D and 2D for depth data enhancement”,
PhD Thesis Co-supervisor, SnT, University of Luxembourg
Funding scheme: **FNR AFR**
Current position: Researcher, IEE S.A.
Academic dissemination: 3 Journals, 6 Conferences, 2 Patents, 1 IEEE Best Student Paper Award.

MSc Supervision

Hashim Abdella (2012); Abednnour Zeboudj (2012); Lijia Gao (2013); Kedija Idris (2013);
Daniel Barmaimon (2015); Cristian Porumb (2018 expected); Himadri Pathak (2018 expected)

BSc Supervision

Aristides Abeywickrama (2018)