

## Curriculum vitae

<b>Personal information</b>	
First name(s) / Sumame(s)	COLTUC DANIELA
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Telephone(s)	[REDACTED]
Fax	-
E-mail	<a href="mailto:daniela.coltuc@upb.ro">daniela.coltuc@upb.ro</a>
Nationality	Romanian
Date of birth	[REDACTED]
Gender	Female
<b>Workplace</b>	<b>University Politehnica of Bucharest- Faculty of Electronics, telecommunications and Information technology</b>
<b>Field of work</b>	<b>Higher education</b>
Address – workplace	1-3 Blv. Iuliu Maniu, nr. 1-3, Bucharest, Romania
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<b>Work experience</b>	
<b>Dates</b>	<b>1991 – onwards</b>
Occupation or position held	<ul style="list-style-type: none"><li>• researcher (1991-1999)</li><li>• Lecturer (1999-2005)</li><li>• Associate professor (2005-2017)</li><li>• Full professor (2017 – onwards)</li></ul>
Main activities and responsibilities	Courses on Information Theory, Detection and estimation, Medical Informatics, Computational Imaging, Biometry, Bioinformatics & data mining, Motion analysis in video sequences, Image and Video compression, Print and Scan; Researches in the fields of image compression, SAR image reconstruction, texture analysis, robust image hashing, compressive sensing, computational imaging.
Name and address of employer	University Politehnica of Bucharest, Splaiul Independentei 313, Bucharest, Romania.
Type of business or sector	Higher education and research
<b>Dates</b>	<b>2005 – 2010</b> 2005 (2 months), 2007 (3 months), 2008 (1 month), 2009 (1 month), 2010 (1 month)
Occupation or position held	Invited professor
Main activities and responsibilities	Research on Texture recognition by using Independent Components Analysis and on Image authentication by robust hashing.
Name and address of employer	Laboratory Hubert Curien, University Jean Monnet 18 Rue du Professeur Benoît Luras, 42000 Saint-Etienne, France
Type of business or sector	Research



<b>Dates</b>	<b>2001 (3 months)</b>
Occupation or position held	Invited researcher
Main activities and responsibilities	Research and development of algorithms for image multiresolution representation in the frame of European project DEBORA (Digital AccEss to BObks of the RenAissance).
Name and address of employer	Université Lyon 2 - Maison de l'Orient et de la Méditerranée 5/7, rue Raulin - 69365 Lyon Cedex 07, France.
Type of business or sector	Research and development
<b>Dates</b>	<b>2000 (3 months)</b>
Occupation or position held	Invited researcher
Main activities and responsibilities	Research on reconstruction of SAR temporal series
Name and address of employer	Ecole Supérieure d'Ingénieurs d'Annecy, Université de Savoie, 41, Av. de la Plaine, BP 806, Annecy Cedex, France
Type of business or sector	Research
<b>Dates a</b>	<b>1998 – 1999 (8 months)</b>
Occupation or position held	Postdoctoral
Main activities and responsibilities	Research on reconstruction of SAR temporal series
Type of business or sector	Research
<b>Dates</b>	<b>2006 (3 months)</b>
Occupation or position held	Invited lecturer
Main activities and responsibilities	Courses on Wavelet analysis and applications in image compression
Name and address of employer	Ecole Supérieure de Chimie Physique Electronique de Lyon Domaine scientifique de la Doua, 43 boulevard du 11 novembre 1918, 69 100 VILLEURBANNE
Type of business or sector	Education
<b>Dates</b>	<b>1982 – 1990</b>
Occupation or position held	Researcher
Main activities and responsibilities	Research and development of equipments for measurements in petroleum wells.
Name and address of employer	Centrul de Cercetări pentru Automatizari Bucuresti (CCAB). Calea Floreasca nr.169, Bucuresti.

Type of business or sector | Research and development

### Education and training

**Dates** 1976-1981  
**Title of qualification awarded** Master of science in Electronics and Telecommunications  
**Principal subjects/occupational skills covered** Mathematics, Physics, Signals Circuits and Systems, Integrated circuits, Microprocessors, Microwave Techniques, Theory of Information Transmission, Modern Communication Techniques, Research Methods  
**Name and type of organisation providing education and training** University Politehnica of Bucharest, Faculty of electronics and Telecommunications

**Dates** 1995-1998  
**Title of qualification awarded** PhD in electronics and telecommunications  
**Principal subjects/occupational skills covered** Thesis title: „Processing methods for remote sensing images“  
**Name and type of organisation providing education and training** University Politehnica of Bucharest

### Personal skills and competences

Mother tongue(s) | Romanian

Other language(s)

Self-assessment

English

French

Computer skills and competences

		Understanding		Speaking		Writing	
		Listening	Reading	Spoken interaction	Spoken production		
	C2	Advanced user	C2 Advanced user	C2 Advanced user	C1 Advanced user	C2	Advanced user
	C2	Advanced user	C2 Advanced user	C2 Advanced user	C2 Advanced user	C1	Advanced user

Matlab, Microsoft Office, Latex.

**Papers in journals and conference proceedings –selected list**

Damian, C., Garoi, F., Udrea, C., & Coltuc, D. *The Evaluation of Single Pixel Camera Resolution*. IEEE Transactions on Circuits and Systems for Video Technology. (2019).

Garoi, F., Udrea, C., Damian, C., Prepelita, P., & Coltuc, D. *THz Laser Beam Profiling by Homogeneous Photodoping of High Resistivity Silicon in a Compact Single-Pixel Detection Setup*. IEEE Transactions on Terahertz Science and Technology, 9(2), 200-208. (2019).

Coluccia, G., Lastri, C., Guzzi, D., Magli, E., Nardino, V., Palombi, L., ... & Coltuc, D. *Optical Compressive Imaging Technologies for Space Big Data*. IEEE Transactions on Big Data. (2019).

Crisan, A. M., Martian, A., Cacoveanu, R., & Coltuc, D. *Angle-of-Arrival Estimation in Formation Flying Satellites: Concept and Demonstration*. IEEE Access, 7, 114116-114130. (2019).

Crisan, A. M., Martian, A., Cacoveanu, R., & Coltuc, D. *Distance estimation in OFDM inter-satellite links*. Measurement, 154, 107479. (2020).

Coltuc, D., Datcu, M., & Coltuc, D. *On the use of normalized compression distances for image similarity detection*. Entropy, 20(2), 99. (2018).

Damian, C., Sima, A., Vasile, T., & Coltuc, D. *Microscanning in Hadamard spectroscopy*. Applied optics, 56(18), 5211-5215. (2017).

Tiberius Vasile, Victor Damian, Daniela Coltuc, Mihai Petrovici, *Single pixel sensing for THz laser beam profiler based on Hadamard Transform*, Journal of Optics and Laser Technology, Elsevier, 2015.

Crisan, A. M., Martian, A., & Coltuc, D. (2018, October). *Inter-Satellite Radio Frequency Ranging in a Hybrid OFDM Communication-Metrology System*. In *2018 15th Workshop on Positioning, Navigation and Communications (WPNC)* (pp. 1-5). IEEE.

Petrovici, M. A., Coltuc, D., Datcu, M., & Vasile, T. *Rate-distortion performance of compressive sensing in single pixel camera*. In IEEE International Conference on Industrial Technology (ICIT) (2015).

J-M. Becker, D. Colțuc, "Linear structures' detection on SAR multi-temporal sets using the Polar Transform". In Proc. of IEEE International Symposium on Geoscience and Remote Sensing, IGARSS'03, Vol. 6, pp. 4050-4052, 2003;

D. Colțuc, J-M. Becker, "A solution for linking the sparse aligned pixels in multi-temporal SAR sets". In Proc. of IEEE International Symposium on Geoscience and Remote Sensing, IGARSS'03, Vol. 6, pp. 4056-4058, 2003;

D. Colțuc, J-M. Becker, R. Rădescu, "A mean based algorithm for the multi-temporal SAR image filtering". In Proc. of IEEE International Symposium on Geoscience and Remote Sensing, IGARSS'02, Vol. 3, pp. 1798-1800, 2002;

E. Trouvé, M. Ciuc, F. Bujor, Ph. Bolon, N. Classeau, J.P. Rudant, D. Colțuc: "Performance assessment of multi-temporal SAR image filtering", in L. Bruzzone and P. Smits eds., Analysis of Multitemporal Remote Sensing Images, vol. 2 of Series in Remote Sensing, World Scientific Publishing, pp. 198-205, 2002;

D. Colțuc, R. Rădescu, "On the homomorphic filtering by channels' summation". In Proc. of IEEE International Symposium on Geoscience and Remote Sensing, IGARSS'02, Vol. 4, pp. 2456-2458, 2002;

D. Colțuc, E. Trouvé, Ph. Bolon, "Bias correction and speckle reduction in time-space filtering of multi-temporal SAR images". In Proc. of IEEE International Symposium on Geoscience and Remote Sensing, IGARSS'01, Vol. 6, pp. 2625-2627, 2001;

D. Colțuc, E. Trouvé, F. Bujor, N. Classeau, J. P. Rudant, "Time-space filtering of multitemporal SAR images", in Proc. of IEEE Geoscience and Remote Sensing Symposium IGARSS 2000, vol. 7, pp. 2909-2911, 2000;

**Additional information**

D. Colțuc, J-M. Becker, "Data Decorrelation by Wavelet Transform", Proc. of EUSIPCO'2000, vol. IV, pp. 2361-2364, 2000; D. Colțuc, in Operational Remote Sensing for Sustainable Development, 18th EARSeL Symposium, pp. 345- 351, 1998;

D. Colțuc, D. Luca, K. Seidel, M. Datcu, "3-Dimensional Signal Analysis of Multichannel Spectrometric Imagery". In Progress in Environmental Remote Sensing Research and Applications, Proc. of 15th EARSeL Symposium, 2005;

D. Colțuc, Seidel K., M. Datcu, "Three-dimensional signal analysis of remotely sensed data", in Image and Signal Processing for Remote Sensing. International Society for Optics and Photonics, pp. 264-268, 1994;

#### **Books**

D. Colțuc, "Filtre anti-speckle pentru imagini radar", Ed. Electra, București, ISBN 973-7228-08-4, 236 pg., 2004.

D. Colțuc, "Wavelets. Aplicații în compresia imaginilor", Ed. Electra, București, ISBN 973-8067-72-3, 182 pg., 2002.

#### **Book chapters**

D. Colțuc, "Robust Image Hashing", capitol in Encyclopedia of Information Science and Technology, Third edition, editata de Mehdi Khosrow-Pour, Ed. IGI Global, Hershey PA, USA, 11 pg., iulie 2014, DOI: 10.4018/978-1-4666-5888-2, ISBN13: 9781466658882, ISBN10: 1466658886, EISBN13: 9781466658899.

T. Fournel and D. Colțuc, „Faces Robust Image Hashing: An attempt to optimality”, capitol in "Information Optics and Photonics: Algorithms, Systems and Applications, Editors: Thierry Fournel and Bahram Javidi, Springer, ISBN 1441973796, pp. 263-272, 2010.

D. Colțuc, "Mathematical Description of Bayesian Algorithms for Speckle Reduction in Synthetic Aperture Radar Data", capitol in "Advanced Geoscience Remote Sensing", editor Maged Marghany, ISBN 978-953-51-1581-6, PUBLISHED: June 5, 2014 under CC BY 3.0 licence, DOI: 10.5772/57529.

#### **Research Projects – selected list**

"The 3-D Analysis of Multivariate Images in the Transformed Space", UPB and ETH-Zurich, Switzerland, Research project 7RUPJ038636, 1994 (responsible).

"Analysis of the Remotely Sensed Data Using 3D Signal Processing Techniques", UPB and ETH-Zurich, Switzerland, Research project 7RUPJ041471, 1995.

DEBORA (Digital AccEss to BOoks of the RenAissance), European research project, 2001.

"Traitement et Analyse d'images ROS multi-dates", Grant post doctoral AUEPLF (Agence Francophone pour l'Enseignement Supérieur et la Recherche), 1998.

ADEMO (Acquisition et DEcision conduites par le Modèle), French research project, 2002.

"An Information Theory Based Approach to Feature Extraction from Digital Images ", Grant CNCSIS IDEI, ID 1882, 2009-2011 (responsible).

"Compressive THz Imaging and Hadamard Spectroscopy for Space Applications", grant ROSA, STAR, ID 153, 2012-2015 (responsible).

OSIRIDE („Open Source Image Retrieval – Integration of Developed Tools”), ESA project, 2015- 2017.

"Optical Compressive Sensing (CS) Technologies for Space Applications”, ESA project, 2015 (responsible).

*Multimodal Environmental Exploration Systems - Novel Technologies MENELAOS<sup>NT</sup>*, H2020-MSCA-ITN-2019 , 2020-2024 (responsible for UPB).