

PERSONAL INFORMATION

Mihai IVANOVICIPOSITION
AT DOCTORAL SCHOOL
UNITBV

PhD coordinator
Doctoral studies domain: **Electronics engineering, telecommunications and information technologies**
Since: 2016

EXPERTISE FIELD AND
RESEARCH INTEREST AREAS

Image and multidimensional signal acquisition, processing and analysis (including color, multi-spectral and hyper-spectral remotely-sensed images)
Data acquisition and processing real-time electronic systems for the ATLAS Experiment at CERN, Geneva

WORK EXPERIENCE

October 2006 - present

Full Professor (2017), assistant professor (2012), lecturer (2006)
Department of Electronics and Computers, Faculty of Electrical Engineering and Computer Science, Transilvania University of Braşov, Romania
▪ Courses: Signal Processing, Signals and Systems I, Image Processing and Analysis, Packet Processors, Research Project Management

October 2015 – October 2023

Coordinator of the research center C13 „Smart electronic systems” within the R&D Institute of Transilvania University of Brasov, Romania

April 2012 – April 2024

Vice-dean responsible for scientific research
Faculty of Electrical Engineering and Computer Science, Transilvania University of Braşov
▪ Coordination of research in the faculty and reporting
Business or sector Public institution

November 2010 – present

“Multispectral Imaging and Vision” laboratory research coordinator
Department of Electronics and Computers, Faculty of Electrical Engineering and Computer Science, Transilvania University of Braşov
▪ Scientific research, coordinating research activities, project management
▪ <http://miv.unitbv.ro>
Business or sector Public institution

February 2002 – present

CERN user
European Organization for Nuclear Research (CERN), Geneva, Elveția
▪ Scientific research in the field of electronic data acquisition systems
Business or sector International institution

September 2001 – October 2006

Research Assistant

Department of Applied Electronics and Information Engineering, Faculty of Electronics, Telecommunications and Information Technology, Politehnica University of Bucharest

- Research activities

Business or sector Public institution

EDUCATION AND TRAINING

March 2016

Habilitation in Electronics Engineering, Telecommunications and Informational Technologies

- Title of the habilitation thesis: Color and Multispectral Texture Image Analysis. Models, Features and Applications
- Jury: prof. C. Burileanu (UPB), prof. C. Rusu (UTCN) și prof. G. Toacșe (UTBv)
- Atestation **OM nr. 3270 / 02.03.2016**
- Defended on: 18 January 2016

October 2001 - January 2006

PhD in Electronics Engineering and Telecommunications

Politehnica University of Bucharest, Romania

- Title: Emulating quality degradation in computer networks - a perspective on performance measurement applications using FPGAs
- Mentor and scientific coordinator: prof. Vasile Buzuloiu
- PhD in electronic engineering and telecommunications: **OM nr. 3824 / 03.05.2006**
- Thesis defense date: January 26th, 2006

October 2001 – July 2002

Postgraduate studies

Politehnica University of Bucharest, Romania

- Programme: Images, Patterns and Artificial Intelligence

October 1996 – July 2001

Bachelor degree studies

Transilvania University of Brașov, Romania

- Programme: Applied Electronics
- Engineer in Digital Electronics and Software Techniques

PERSONAL SKILLS

Mother tongue Romanian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Listening	Reading
English	C2	C2	C2	C2	C2
French	C2	C2	C1	C2	C2

Communication skills

- Good communication skills gained due to work experience as vice-dean, research laboratory coordinator, project director, manager and professor

Organisational / managerial skills

- good management skills for implementation of didactic and research projects; organizational skills - conferences, summer schools, outreach events; drafting and evaluating research project proposals; programming skills - MATLAB, C/C++

Job-related skills

Digital competence

- good knowledge of using LaTeX and Microsoft Office™ tools

ADDITIONAL INFORMATION

 Representative Projects
(as project manager or assistant manager)

- 2024 – 2026 – AICoRS - Artificial Intelligence-enabled Hardware Cosmic Radiation Sensor for Space Applications, RO-MD (budget 467.568 lei)
- 2022 – 2025 – AI4AGRI - Romanian Excellence Center on Artificial Intelligence on Earth Observation data for Agriculture, GA 101079136 (budget 1.412.360 euro)
- 2020 – 2023 - InnEO_Space_PhD - Open Science Innovation in PhD programme through Earth Observation: towards new career skills development, GA 101006275 (budget 74.125 euro)
- 2016-2019 – The ATLAS Experiment at LHC – PNIII CERN-RO Module, coordinated by IFIN-HH Măgurele, responsible Partner no.5 Universitatea Transilvania din Braşov, contract no. 6/2016 (budget: 1.238.490,60 lei)
- 2014-2015 – The ATLAS Experiment at LHC – PNII Modul Capacităţi, coordinated by IFIN-HH Măgurele, responsible Partener no .5 Universitatea Transilvania din Braşov, contract nr. 7/2012 (budget: 124.979,94 lei)
- 2014 – 2015 Burse doctorale pentru cercetarea de excelență, coordonator Universitatea Transilvania din Braşov, proiect POSDRU/159/1.5/S/134378, Responsabil grup ţintă
- 2014 – 2015 - Cresterea atractivitatii si performantei programelor de formare doctorala si postdoctorala pentru cercetatori in stiinte ingineresti - ATTRACTING, coordonator Universitatea Politehnica din Timișoara, POSDRU/159/1.5/S/137070, Asistent implementare proiect la partener UTBv
- 2014 - IEEE SPS Summer School on Intensive Program on Computer Vision (IPCVC 2014), competiție SPS seasonal schools, finantator:IEEE International LLC NrContract: 5860/21.05.2014
- 2010 – 2013, ITEMS – Analysis, Modeling and Simulation Techniques for Imagery, Bioinformatics and Complex Systems (ITEMS) contract POS-DRU/86/1.2/S/61756, 2010-2013
- 2012 – SAPAI – International School on Image Processing - Scoala de Studii Aprofundate (UEFISCDI IDEI SSA) Studii Aprofundate de Prelucrarea si Analiza Imaginilor (SAPAI 2012) contract 9/2012

Relevant publications

- I. C. Plajer, A. Băicoianu, L. Majercsik, **M. Ivanovici**, "Multisource Remote Sensing Data Visualization using Machine Learning," in IEEE TRANSACTIONS ON GEOSCIENCE AND REMOTE SENSING, 2024
- **M. Ivanovici**, "A Multi-Spectral Fractal Image Model and Its Associated Fractal Dimension Estimator", FRACTAL AND FRACTIONAL, vol. 7, issue 3, 2023
- R. Coliban, **M. Ivanovici**, "Quality-based band selection for hyperspectral image visualization", REMOTE SENSING LETTERS, vol. 14, issue 3, 2023
- S. Opreșescu, R. Coliban, **M. Ivanovici**, „Polarization-based optical characterization for color texture analysis and segmentation”, PATTERN RECOGNITION LETTERS, 163, nov. 2022
- I. E. Nicolae, **M. Ivanovici**, "Color Texture Image Complexity-EEG-Sensed Human Brain Perception vs. Computed Measures", APPLIED SCIENCES, 11(9), 2021
- I. E. Nicolae, **M. Ivanovici**, "Preparatory Experiments Regarding Human Brain Perception and Reasoning of Image Complexity for Synthetic Color Fractal and Natural Texture Images via EEG", APPLIED SCIENCES, 11(1), 2021
- **M. Ivanovici**, "Fractal Dimension of Color Fractal Images with Correlated Color Components", IEEE TRANSACTIONS ON IMAGE PROCESSING, vol. 29, 2020,
- S. Popa, S. Martoiu, **M. Ivanovici**, "Study of the ATLAS New Small Wheel Read-Out Controller ASIC in a Neutron Irradiation Environment", JOURNAL OF INSTRUMENTATION, vol. 15, 2020
- Ș. Popa, S. Martoiu, **M. Ivanovici**, „The Quality-Control Test of the ATLAS New Small Wheel Read-Out Controller ASIC: Part I - Digital logic", JOURNAL OF INSTRUMENTATION, Mar. 2020
- **M. Ivanovici**, R.M. Coliban, C. Hatfaludi, I.E. Nicolae, „Color Image Complexity versus Over-segmentation. A Preliminary Study on the Correlation between Complexity Measures and Number of Segments”, MDPI JOURNAL OF IMAGING, March 2020 – acceptat spre publicare
- R.M. Coliban, **M. Ivanovici**, "Reducing the oversegmentation induced by quasi-flat zone for color images", JOURNAL OF VISUAL COMMUNICATION AND IMAGE REPRESENTATION, vol. 53, pp. 281-293, May 2018
- O.M. Machidon, **M. Ivanovici**, "Digital color restoration for the preservation of reversal film heritage", JOURNAL OF CULTURAL HERITAGE, vol. 33, pp. 181-190, October 2018
- R. Coliban, **M. Ivanovici**, N. Richard, "Improved probabilistic pseudo-morphology for noise reduction in color images", IET IMAGE PROCESSING, DOI
- R. Coliban, S. Popa, T. Tulbure, D. Nicula, **M. Ivanovici**, S. Martoiu, L. Levinson, J. Vermeulen, The Read Out Controller for the ATLAS New Small Wheel, JOURNAL OF INSTRUMENTATION, volume 11, February 2016
- M. Ivanovici, "Color and Multispectral Texture Image Analysis – Models, Features and Applications", Transilvania University Press, ISBN 978-606-19-0587-4, September 2015
- A. Căliman, **M. Ivanovici**, N. Richard, „Probabilistic pseudo-morphology for grayscale and color images”, PATTERN RECOGNITION, vol. 47, no. 2, pag. 721-735, 2014
- **M. Ivanovici**, N. Richard, D. Paulus, "Color Image Segmentation", in "Advanced Color Image Processing and Analysis", Editor: Christine Fernandez-Maloigne, Springer, 2012
- **M. Ivanovici**, N. Richard, "Colour Fractal Dimension of Colour Fractal Images", IEEE TRANSACTIONS ON IMAGE PROCESSING, vol. 20, issue 1, pp. 227–235, 2011

Projects
(researcher,
implementation team
member)

- 2020-2022 – The ATLAS Experiment at LHC – PNIII CERN-RO Module, coordinated by IFIN-HH Măgurele, contract no. 10/2020, financed by IFA
- 2020-2022 – Brain DigiPrint (mentor), Determinarea unei amprente digitale a creierului uman utilizabilă pentru procese de criptare, bazată pe potențialele ERP detectate în semnalele cerebrale EEG, PN-III-P1-1.1-PD-2019-0971 contract: PD 215/2020, financed by UEFISCDI
- 2014 – 2016 - Sistem inteligent de asistare automată a diagnosticului în cancerul cervical - PN-II-PT-PCCA-2013-4-0202, Universitatea Politehnică din București, contract no. 7/2014, financed by UEFISCDI
- 2010 – 2013 - Program multi-regional de studii masterale în domeniul eActivități - eSTART, ID 54956, POSDRU/86/1.2/S/54956 (short-term expert)
- 2010 – 2012 – MorFISM: morphologie et fractales pour l'image spécialisée et multimedia (proiect FEDER no. 33073-2010, France)
- 2008 – Modele de connaissances pour la valorisation des bases des données multimedia (DLES/ESRS/MV/AE-projet regional Poitou-Charentes, Lab. SIC, Université de Poitiers, France)
- 2007 – 2009 Integrated System for Medical Information Management using the HL7 Standard– SIMIMED (PN2, D1-1-019/14.09.2007)
- 2007 - MOB-URBIS – Traffic Management of the Urban Mobility Increase (CEEX Cod MEC 1589, nr. X2C34, AMTRANS, conf. MEC-ANCS nr. 10909/19.09.2006)
- 2006 - The research, design and testing of software tools for the mapping of installed network configurations and correlation of the achieved map with existing equipment data-bases UPB-CERN 2006 I10.06.01
- 2005 – Development of an Integrated System of Mathematical Models for the Network Devices UPB-Liamis & Heb, 17-03-05
- 2004 - Research Agreement for characterization of a network of processors for ATLAS Trigger Data Collection UPB-CERN 2004 I10.04.01
- 2004 – Contributions to the Design, Testing and Evaluation of the Investigation Potential of the ATLAS Detector – PM-01-RIA UPB-IFIN
- 2004 – New Mathematical Models for the Network Devices - UPB-Liamis & Heb EL400410
- 2003 – 2005 - FPGA-based Network Emulator PPARC (Particle Physics and Astronomy Research Council) UK CERN-EU4A- PPARC PIPSS Project No: PPA/I/S/2002/00653
- 2003 - Software tools for the ATLAS data acquisition system (Research Agreement) UPB-CERN 2005 I10.05.01
- 2002 – Ethernet Traffic Generation Software for the CERN Network UPB- 17-02-05

Lectures delivered as
guest or visiting
professor

- 2019, October 9, A theory of information perspective on hyperspectral images, NTNU, Gjøvik, Norvegia
- 2019, July 5, A theory of information perspective on hyperspectral images, UPS, IRIT, Toulouse, France
- 2018, July 6, Non-linear approaches based on the maximum distance — a pseudo morphology and PCA approximation for color, multispectral and hyperspectral data/image analysis, IRIT, Toulouse, France
- 2010, September 29, Multi-scale Variance-driven Active Contours for CT Image Segmentation with Application to Hepatic Volumetry, Laboratoire des signaux et systèmes (L2S), SUPELEC, France
- 2010, June 25, Fractal Analysis for Colour Images, Laboratoire des signaux et systèmes (L2S), SUPELEC, France
- 2010, May 27, Colour Fractal Analysis for Video Quality Assessment, University of Konstanz, Germany
- 2007, December 2th, Quality of Service in computer networks, European Organization for Nuclear Research, CERN, Geneva, Switzerland

H indices

Google Scholar: 14; Scopus: 9; Web of Science Clarivate Analytics: 6

Other information

- Summary of achievements:
- 2 chapters published in international printing houses
 - 6 books published at national printing houses
 - 4 chapters published in national printing houses
 - 46 articles indexed in Web of Science

Membership in
professional societies

- IEEE Senior Member (Signal Processing & Geoscience and Remote Sensing Societies)
- European Organization for Nuclear Research, Geneva, Switzerland
- CIE – International Commission on Illumination