PERSONAL INFORMATION

Mihai IVANOVICI

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Str. Politehnicii nr. 1, Brașov 500024, România

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POSITION 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 Brașov, 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 Brașov

- 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 Brașov

- 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

ADDITIONAL INFORMATION

Representative Projects (as project manager or assistant manager)

- 2025 – 2026 – ELIAC – Early Identification of Agricultural Crops, PED (budget 82k€)
- 2024 – 2026 – SEEN – Social Entrepreneurship Ecosystems Network, Erasmus+ KA220-HED, contract no. 2024-1-BG01-KA220-HED-000255491 (budget 53 k€)
- 2024 – 2026 – AI4RISK – Platformă de fuziune și management a colecțiilor de date multi-sursă exploatabile de către modele cu inteligență artificială pentru estimarea și analiza predictivă a situațiilor de risc, contract. no. 3Sol(T3) / 02.09.2024 (budget 104 k€)
- 2024 – 2026 – IMINT – IMINT pentru Marea Neagră, frontiere, mine, contract no. 21Sol(T21) / 18.07. 2024 (budget 100 k€)
- 2024 – 2026 – AICoRS - Artificial Intelligence-enabled Hardware Cosmic Radiation Sensor for Space Applications, RO-MD (budget 93 k€)
- 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 Brașov, contract no. 6/2016 (budget: 1.238.490,60 lei)
- 2014-2015 – The ATLAS Experiment at LHC – PNII Modul Capacități, coordinated by IFIN-HH Măgurele, responsible Partener no .5 Universitatea Transilvania din Brașov, contract nr. 7/2012 (budget: 124.979,94 lei)
- 2014 – 2015 Burse doctorale pentru cercetarea de excelenta, coordonator Universitatea Transilvania din Brașov, proiect POSDRU/159/1.5/S/134378, Responsabil grup țintă

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. Oprișescu, 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 in semnalele cerebrale EEG, PN-III-P1-1.1-PD-2019-0971 contract: PD 215/2020, financed by UEFISCDI • 2014 – 2016 - Sistem inteligent de asistare automata a diagnosticului in cancerul cervical - PN-II-PT-PCCA-2013-4-0202, Universitatea Politehnica din București, contract no. 7/2014, financed by UEFISCDI • 2010 – 2013 - Program multi-regional de studii masterale in domeniul eActivitati - eSTART, ID 54956, POSDRU/86/1.2/S/54956 (short-term expert) • 2010 – 2012 – MorFISM: morphologie et fractales pour l'image specialisee et multimedia (project FEDER no. 33073-2010, France) • 2008 – Modele de connaissances pour la valorisation des bases des donnees multimedia (DLES/ESRS/MV/AE-projet regional Poitou-Charentes, Lab. SIC, Universite 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: 15; Scopus: 9; Web of Science Clarivate Analytics: 9
Other information	Summary of achievements: • 3 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