Curriculum Vitae

Marius LEORDEANU

Google Scholar: https://scholar.google.com/citations?user=se9kni0AAAAJ&hl=en&oi=ao
DBLP Profile: https://dblp.org/pid/21/5985.html
URL for web site: https://sites.google.com/site/mariusleordeanu/home
Total Citations (Google Scholar): 7398, H-index: 34.

EDUCATION

PhD in Robotics, The Robotics Institute, Carnegie Mellon University, USA, 2009
Specialization in Computer Vision, GPA 3.92/4.0.
PhD Thesis: Spectral Graph Matching, Learning and Inference for Computer Vision
PhD Advisor: Professor Martial Hebert, Director of the Robotics Institute.
Bachelor's in Mathematics and Computer Science, Hunter College, New York, 2003, GPA 3.88/4.0
Research work on automatic 3D registration of large-scale urban scenes.
Scientific Advisor: Professor Ioannis Stamos, with whom we published a paper at CVPR 2003.
Research work on bipartite graph covering. Scientific Advisor: Professor Cristina Zamfirescu
Habilitation in Computer Science, October 2015, Romanian Academy, Romania.

PROFESSIONAL AND ACADEMIC POSITIONS

Professor of Computer Science, since July 2021
Computer Science Department, University Politehnica of Bucharest.
Senior Researcher and Principal Investigator, 2010 – present
Institute of Mathematics of the Romanian Academy.

AWARDS AND FELLOWSHIPS

Google Research Award, 2021
Romanian Academy "Grigore Moisil" Prize in Mathematics, 2014
Computing Research Association (CRA) Outstanding Undergraduate Award, USA, 2003.
Joseph A. Gillet Memorial Prize in Mathematics, USA, 2003.
Intel PhD Fellowship, USA, 2007-2009 (less than 30 in USA per year awarded).
National Science Foundation Scholarship, USA, 2002-2003.
Prizes at the National Physics Olympiad: Absolute First – 1994; Second – 1996, 1998; Third – 1995.
National Olympiad of Mathematics, Honorable Mention, 1997.

LIST OF SELECTED PUBLICATIONS AS FIRST AUTHOR

1. M. Leordeanu, R. Sukthankar and C. Sminchisescu, *Generalized Boundaries from Multiple Image Interpretations,* Pattern Analysis and Machine Intelligence (TPAMI), 2014.
2. M. Leordeanu, R. Sukthankar and M. Hebert, *Unsupervised Learning for Graph Matching*, International Journal of Computer Vision (IJCV), 2012**.**
3. M. Leordeanu and M. Hebert, *A Spectral Technique for Correspondence Problems Using Pair-wise Constraints*, International Conference on Computer Vision (ICCV), 2005.
4. M. Leordeanu, M. Hebert and R. Sukthankar, *An Integer Projected Fixed Point Method for Graph Matching and MAP Inference*, Neural Information Processing Systems (NeurIPS), 2009.
5. M Leordeanu, M. Hebert, R. Sukthankar, *Beyond Local Appearance: Category Recognition from Pairwise Interactions of Simple Features,* Computer Vision and Pattern Recognition (CVPR), 2007.
6. M. Leordeanu, R. Sukthankar and C. Sminchisescu, *Efficient Closed-Form Solution to Generalized*

Boundary Detection, European Conference on Computer Vision, 2012.
7. M. Leordeanu, A. Zanfir and C. Sminchisescu, *Locally affine sparse-to-dense matching for motion and occlusion estimation*, International Conference on Computer Vision (ICCV), 2013.
8. M. Leordeanu, A. Zanfir and C. Sminchisescu, *Semi-supervised Learning and Optimization for Hypergraph Matching*, International Conference on Computer Vision (ICCV), 2011.
9. M. Leordeanu and M. Hebert, *Smoothing-based Optimization*, Computer Vision and Pattern Recognition, 2008.
10. M. Leordeanu and R. Collins, *Unsupervised Learning of Object Features from Video Sequences*, CVPR, 2005.
11. M. Leordeanu and M. Hebert, *Efficient MAP Approximation for Dense Energy Functions*, International Conference on Machine Learning (ICML) 2006.
12. M. Leordeanu and C. Sminchisescu, *Efficient Hypergraph Clustering*, AISTATS, 2012.
13. M. Leordeanu, Mihai Cristian Pîrvu, Dragos Costea, Alina Elena Marcu, Emil Slusanschi, Rahul Sukthankar. *Semi-Supervised Learning for Multi-Task Scene Understanding by Neural Graph Consensus*. AAAI 2021
14. M. Leordeanu, Iulia Paraicu. *Driven by Vision: Learning Navigation by Visual Localization and Trajectory Prediction*. Sensors 21(3): 852, 2021.
15. M. Leordeanu, Unsupervised Learning in Space and Time: A Modern Approach for Computer Vision using Graph-based Techniques and Deep Neural Networks (Book, 297 pages), Springer Nature, 2020.

GRANTS WON AS PRINCIPAL INVESTIGATOR

1. Google Research Award, 2021, 50K US dollars.
2. EEA and Norway Grant 2019-2022: EEA-RO-2018-0496 (1.5 Million Euro) "Spacetime Vision – Towards Unsupervised Learning in the 4D World"
3. European Funds Grant 2015-2019: POC-A1.2.1D-2015-P39-287 (1 Million Euro) –„Automatic interpretation of images and video sequences using natural language processing" (PI with Traian Rebedea)
4. UEFISCDI Grant PN-III-P4-ID-PCE-2020-2819, 2021-2023 (250K Euro), „HyperVision: Unsupervised Visual Learning through Intelligent Equilibrium in Hypergraphs of Neural Networks"
5. UEFISCDI Grant 2018-2020: PN-III-P1-1.2-PCCDI2017-0734 (1.7 Million Euro) „Robots and Society: Cognitive Systems for Personal Robots and Autonomous Vehicles" (I am the PI of the IMAR Partner).
6. UEFISCDI Grant 2018-2020: TE-2016-2182 (100K Euro) « Vision in Words : Automatic Linguistic Description of Objects, People and their Interactions in Indoor Videos"
7. UEFISCDI ERC-like Grant 2016-2018: ERC-2016-0007 (170K Euro) "The Classifier Graph: A Recursive Multiclass Network for Deep Category Recognition in Images and Video".
8. UEFISCDI Grant 2016-2018: PED-2016-1842 (105K Euro) "Automatic linguistic descriptions of objects, people and their interactions in indoor videos".
9. UEFISCDI Grant 2012-2016: PCE-2012-4-0581 (300K Euro), "Automatic Video Understanding at Middle and Higher Levels of Interpretation".

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCS

PhD supervisor of doctoral students at SCOSAR (Doctoral School of the Romanian Academy):
Ioana Croitoru, Vlad Bogolin, Emanuela Haller (graduated in January 2022), Elena Burceanu (graduated in February 2022), Alina Marcu, Dragos Costea, Nicolae Cudlenco, Mihai Pirvu, Mihai Masala and Florin Condrea, with whom we publish in the top international conferences and journals in computer vision, machine learning and robotics (ICCV, CVPR, TPAMI, IJCV, NeurIPS, ECCV, AAAI, IJCAI, ICRA).
Former postdoctoral advisor of: Prof. Radu Ionescu (Univ. of Bucharest), with joint papers at top international conferences (CVPR, WACV) and Prof. Oana Balan (UPB), with joint articles/chapters in relevant journals (Sensors, Symmetry), conferences (ECIS) and books (Springer).

ORGANIZATION OF SCIENTIFIC EVENTS

General Chair and Organizer, Embedded Computer Vision Workshop (EVW 2021 and 2022) in conjunction with Computer Vision and Pattern Recognition (CVPR) - top vision conference in USA.
Program Chair and Organizer, Embedded Computer Vision Workshop (EVW 2020) in conjunction with European Conference on Computer Vision (ECCV) - top computer vision conference in Europe.
Co-Organizer of the **Eastern European Summer School in Machine Learning (EEML 2019)**, Bucharest 2019 (www.eeml.eu), together with colleagues from DeepMind, Politehnica of Bucharest and Bitdefender. It is the top machine learning summer school Eastern Europe.
Co-Organizer of the **International Summer School on Imaging for Medical Applications (SSIMA)**, Sibiu, 2018 (http://gomit.tech/ssima/). It is the top summer school in medical imaging in Eastern Europe.
Special Sessions Chair for **ACM International Conference on Multimedia Retreival**, 2017. It is one of the top international conferences in the world on multimedia processing.
Co-chair, **Exploratory Workshop on Computer Vision, Learning and Robotics**, for the conference "Diaspora in Cercetarea Stiintifica si Invatamantul Superior din Romania", 2012.

MAJOR COLLABORATIONS

Rahul SUKTHANKAR, **Director of Research, Google AI**, on many topics in computer vision with many papers published in top conferences and journals, 2006-Present.
Andrew ZISSERMAN and Sam ALBAINE (Visual Geometry Group, University of Oxford), together with my PhD students Ioana Croitoru and Vlad Bogolin, on the topic of vision to text translation (Feb 2020-present). We published a paper at ICCV 2021 and will soon submit a journal paper to TPAMI (IF 16.39).
Nabil Belbachir, **Director of Research at NORCE,** on smart cameras, Earth observation and vision for self-flying drones. We will soon submit our results to journal Nature Machine Intelligence (IF: 15.5).
Viorica PATRAUCEAN and Razvan PASCANU, Research Scientists, Google DeepMind: collaborate on several projects in machine learning and computer vision, including the organization of scientific events, such as the Eastern European Machine Learning (EEML) Summer School, 2019.

RESEARCH COORDINATOR AND ARCHITECT IN INDUSTRIAL PROJECTS

1. **Collaboration with BITDEFENDER:** coordinating a team of four people on research projects related to unsupervised object discovery in video and vision to language translation from video. Several papers published together in top computer vision and machine learning conferences.
2. **Collaboration with FORDAQ:** coordinating a team of four people on an R&D project related to artificial intelligence and computer vision for automating the wood industry, with clients in the entire world, especially in the USA. This work produced two **US Patents**:
   US Patent: Leordeanu Marius, et al. 2021, "Automatic detection, counting, and measurement of logs using a handheld device." U.S. Patent No. 11,189,022.
   US Patent: Leordeanu Marius et al, Fordaq SA, 2020. *Automatic detection, counting, and measurement of lumber boards using a handheld device.* U.S. Patent 10,586,321.
3. **Collaboration with ARNIA:** coordinating a team of three people on projects related to self-driving cars and other robotics applications with clients in Germany and South Korea. Several papers published together in top computer vision conferences on vision for medicine and self-driving cars.

INVITED TALKS

2009-Present: over 50 invited talks at international conferences, summer schools and labs, including:
European Space Agency Workshiop on Artificial Intelligence (2021), TEDxUPB (https://www.youtube.com/watch?v=3DolxC2CW14&t=6s), DeepMind (London), Visual Geometry Group of Andrew Zisserman (University of Oxford), Computer Vision Group of Kostas Daniilidis (University of Pennsylvania,

USA), Computer Vision Group of Ioannis Kakadiaris (University of Houston, USA), Computer Vision Group of Ioannis Stamos (City University of New York, USA).

SPECIAL GUEST IN SCIENTIFIC AND CULTURAL TV PROGRAMS

(Please see the full list at: https://sites.google.com/site/mariusleordeanu/home)
TVR1 – host of the "Authentic Romania" series, Episode 2
Digi24 – "Bonton", TVR2 – "A Second Emigration"
Discovery Channel – "A Career in Science".

AREA CHAIR IN TOP CONFERENCES IN ARTIFICIAL INTELLIGENCE

Area Chair for the International Conference on Computer Vision (ICCV) 2019, Rank A+
Area Chair for Computer Vision and Pattern Recognition (CVPR) 2020, Rank A+
Area Chair for European Conference on Computer Vision (ECCV) 2020, Rank A
Area Chair for Winter Applications for Computer Vision (WACV) 2018, Rank A
Senior Program Committee member of IJCAI 2020 and 2022, Rank A+

MEMBER OF THE EDITORIAL BOARD OF PRESTIGIOUS JOURNALS

Associate Editor, Transactions on Pattern Analysis and Machine Intelligence (TPAMI
Area Editor for Computer Vision and Image Understanding (CVIU), Impact factor 5.30
Area Editor for Machine Vision and Applications (MVA), Impact factor: 2.55
Area Editor for Sensors, Impact factor: 3.58
Guest Editor of Special Issues on „Sensors and Techniques for 3D Object Modelling", 2020, IF: 3.58.

PUBLISHED BOOKS, MUSIC COMPOSITION AND ART COLLABORATIONS

Scientific book

M. Leordeanu, Unsupervised Learning in Space and Time: A Modern Approach for Computer Vision using Graph-based Techniques and Deep Neural Networks, 297 pages, Springer Nature, May 2020. ISBN: 978-3-030-42127-4.
11 K downloads so far on: https://link.springer.com/book/10.1007/978-3-030-42128-1

Artificial Intelligence and Art Projects in collaboration with National University of Arts (UNArte)

1. Artist Cristina Lazăr, Engineer Nicolae Roșia, Prof. Univ. Dr. Petru Lucaci (UNArte) și Prof. Univ. Dr. Marius Leordeanu (UPB) "SmileProject: Deep Immersive Art with Realtime Human AI Interaction" (https://sites.google.com/view/smile-Project), presented at:

   National Festival of Young Artists - Diploma (https://diplomafestival.ro/portofolii/proiectulzambet), October 2019
   Binar National Festival (https://institute.ro/digital/binar-2019-5367.html), Noiembrie 2019
   ArtWalkStreet Festival, presented on Calea Victoriei, Piața Revoluției (Bucharest Center), September 2019.

2. Prof. Univ. Dr. Marius Leordeanu, Drd. Dragos Costea and Cristina Lazăr, "Between Worlds", exhibited at Artbox.Project Miami 3.0, Miami, USA, December 2022.

Popular science and philosophy book:

Marius Leordeanu, „My name is blue", 178 pages, Valea Verde, 2016.
ISBN: 606-8834-04-7. Available at:
https://www.librariaeminescu.ro/ro/isbn/606-8834-04-7/Marius-Leordeanu__Ma-numesc-albastru.html

Poetry book:
Marius Leordeanu, "The Story of a Word", 76 pages, Papirus Media, 2013.
ISBN: 606-8137-39-1. Available at:
https://www.librariaeminescu.ro/ro/isbn/606-8137-39-1/Marius-Leordeanu__Povestea-unui-cuvant.html

Music album (piano and electronic)
Composition and Intepretation: Marius Leordeanu, Album title: „Supersonic".
Recorded at Kemper Music Studios / Bucharest.
Produced by Ciprian Lemnaru and Marius Leordeanu.
Available on most music channels, including:
Spotify: https://open.spotify.com/album/6SPhzD088xm7xfqvIvzrg7
YouTube: https://youtube.com/playlist?list=OLAK5uy_mbGgwl0Mr08Ny0H9U8WkWzGtTTflMEWz0

Additional music composed and interpreted by Marius Leordeanu is available at:
https://www.youtube.com/user/MariusLeordeanu.