Curriculum Vitae





Marius LEORDEANU

Google Scholar:
https://scholar.google.com/citations?user=se9kni0AAAAJ&hl=en&oi=ao
Website: https://sites.google.com/site/mariusleordeanu/home
Google Scholar Citations: 9,131 **H-index:** 40

EDUCATION

Ph.D. in Robotics, The Robotics Institute, Carnegie Mellon University, USA, 2009
Specialization in Computer Vision, GPA 3.92/4.0.
Doctoral Dissertation: *Spectral Graph Matching, Learning and Inference for Computer Vision*
Dissertation Advisor: Professor Martial Hebert, Director of the CMU Robotics Institute.

Bachelor's Degree in Mathematics and Computer Science,
Hunter College, New York, 2003, GPA 3.88/4.0

Habilitation in Computer Science, Romanian Academy, Romania, 2015

PROFESSIONAL AND ACADEMIC POSITIONS

Full Professor, 2021–Present
Department of Computer Science and Engineering, POLITEHNICA Bucharest
Research Scientist and Principal Investigator, 2010–Present
"Simion Stoilow" Institute of Mathematics of the Romanian Academy
Research Scientist, 2022–Present
Norwegian Research Centre (NORCE)

AWARDS

"Grigore Constantin Moisil" Prize in Computer Science, the highest distinction awarded at the **Romanian Research Gala**, 2024.

Google Research Awards, 2021 and 2025.

Romanian Academy "Grigore Moisil" Award in Mathematics, 2014.
Computing Research Association (CRA) Outstanding Undergraduate Award, USA, 2003.
Joseph A. Gillet Memorial Prize in Mathematics, USA, 2003.
Intel Ph.D. Fellowship, USA, 2007–2009 (fewer than 30 awarded annually in the United States).
National Science Foundation Scholarship, USA, 2002–2003.
Romanian National Physics Olympiad Awards: Absolute First Prize (1994), Second Prize (1996 and 1998), Third Prize (1995)
Romanian National Mathematics Olympiad: Honorable Mention (1997)

SUPERVISION OF PH.D. STUDENTS AND POSTDOCTORAL RESEARCHERS

Doctoral Supervisor at **SCOSAAR (Doctoral School of the Romanian Academy)**: In 2022, four students successfully obtained their Ph.D. degrees (**Emanuela Haller, Elena Burceanu, Ioana Croitoru, and Vlad Bogolin**), while in 2024, two other outstanding students completed their Ph.D. degrees (**Alina Marcu and Dragoș Costea**). At present, four additional students are preparing to defend their dissertations in 2025 (**Mihai Pîrvu, Mihai Masala, and Florin Condrea**) and in 2026 (**Nicolae Cudlenco**).

Together with all of my Ph.D. students, I have published papers in prestigious international conferences and journals, including **ICCV, CVPR, ECCV, AAAI, IJCV, IJCAI, BMVC, NeurIPS,** and the **Artificial Intelligence Journal**.

In 2025, **Dragoș Costea**, co-supervised with **Prof. Emil Slusanschi**, received the award for the **Best Ph.D. Thesis** within the doctoral school.

For a period of two years, I also served as postdoctoral mentor to **Prof. Radu Ionescu** (University of Bucharest) and **Assoc. Prof. Oana Mitruț (Bălan)** from POLITEHNICA Bucharest, with whom I published papers in prestigious international conferences and journals.

ORGANIZATION OF SCIENTIFIC EVENTS

Program Chair and Organizer, Embedded Computer Vision Workshop (**EVW**, 2020–2026), organized in conjunction with the **European Conference on Computer Vision (ECCV 2020)** and the **Conference on Computer Vision and Pattern Recognition (CVPR 2021–2023, 2024–2026)**, among the leading international conferences in Artificial Intelligence.

Co-Organizer, Eastern European Summer School in Machine Learning (**EEML 2019**), Bucharest, Romania (www.eeml.eu), together with colleagues from **DeepMind**, **POLITEHNICA Bucharest**, and **Bitdefender**. EEML is the leading summer school in Machine Learning in Eastern Europe.

Co-Organizer, International Summer School on Imaging for Medical Applications (**SSIMA**), Sibiu, Romania, 2018 (http://gomit.tech/ssima/). SSIMA is the leading summer school in Medical Image Analysis in Eastern Europe.

Special Sessions Chair, ACM International Conference on Multimedia Retrieval (**ICMR**), 2017. ICMR is one of the world's leading conferences in multimedia retrieval and processing.

Co-Chair, *Exploratory Workshop on Computer Vision, Learning and Robotics*, organized within the conference **"Diaspora in Scientific Research and Higher Education in Romania"**, 2012.

MAJOR COLLABORATIONS

Andrew Zisserman and Sam Albaine (Visual Geometry Group, University of Oxford), together with my Ph.D. students **Ioana Croitoru** and **Vlad Bogolin**, on the topic of **unsupervised learning in video**. This collaboration resulted in two high-impact publications: one conference paper (**ICCV 2021**) and one journal article (**Artificial Intelligence, 2025**).

Rahul Sukthankar, Vice President of Research, Google Research, on multiple topics in computer vision and the development of unsupervised learning systems, 2006–Present.

Nabil Belbachir, Scientist and Research Director at NORCE, Norway, on smart cameras and various other research topics within multiple collaborative projects, including a successful EEA Grants project (2019–2022).

Viorica Pătrăucean and **Răzvan Pascanu**, researchers at Google DeepMind, collaborating on numerous research topics in Artificial Intelligence, Machine Learning, Deep Neural Networks, and Computer Vision, including the organization of scientific events such as the **Eastern European Machine Learning Summer School (EEML)**.

RESEARCH GRANTS AWARDED AS PRINCIPAL INVESTIGATOR

1. **ELIAS: European Lighthouse of AI for Sustainability** (€250,000) HORIZON-CL4-2022-HUMAN-02-02.
2. **Google Research Award (2021–2022)** (€50,000).
   "Self-supervised Learning using Graph Consensus."
3. **UEFISCDI Grant PN-III-P4-ID-PCE-2020-2819**, 2021–2023 (€250,000).
   "HyperVision: Unsupervised Visual Learning through Intelligent Equilibrium in Hypergraphs of Neural Networks."
4. **EEA and Norway Grant EEA-RO-2018-0496**, 2019–2022 (€1.5 million).
   "Spacetime Vision – Towards Unsupervised Learning in the 4D World."
5. **UEFISCDI Grant PN-III-P1-1.2-PCCDI2017-0734**, 2018–2020 (€1.7 million).
   "Robots and Society: Cognitive Systems for Personal Robots and Autonomous Vehicles."
   (Coordinator of the IMAR partner institution.)
6. **UEFISCDI Grant TE-2016-2182**, 2018–2020 (€100,000).
   "Vision in Words: Automatic Linguistic Description of Objects, People and Their Interactions in Indoor Videos."
7. **UEFISCDI ERC-like Grant ERC-2016-0007**, 2016–2018 (€170,000).
   "The Classifier Graph: A Recursive Multiclass Network for Deep Category Recognition in Images and Video."
8. **UEFISCDI Grant PED-2016-1842**, 2016–2018 (€105,000).
   "Automatic Linguistic Descriptions of Objects, People and Their Interactions in Indoor Videos."
9. **UEFISCDI Grant PCE-2012-4-0581**, 2012–2016 (€300,000).
   "Automatic Video Understanding at Middle and Higher Levels of Interpretation."
10. **European Structural Funds Grant POC-A1.2.1D-2015-P39-287**, 2015–2019 (€1 million).
    "Automatic Interpretation of Images and Video Sequences Using Natural Language Processing."
    (Co-Research Supervisor together with the Project Director, Dr. Traian Rebedea.)

PUBLISHED PATENTS

1. **Marius Leordeanu, Alina Marcu, Iulia Muntianu, Cătălin Mutu**. *Automatic Detection, Counting, and Measurement of Lumber Boards Using a Handheld Device.* **U.S. Patent 11,216,905**, 2022.
2. **Marius Leordeanu, Iulia Muntianu, Dragoș Costea, and Cătălin Mutu**. *Automatic Detection, Counting, and Measurement of Logs Using a Handheld Device.* **U.S. Patent 11,189,022**, 2021.
3. **Marius Leordeanu, Vlad Licăreț, Tudor Buzu, Iulia Muntianu, and Cătălin Mutu**. *Automatic Detection, Counting, and Measurement of Lumber Boards Using a Handheld Device.* **U.S. Patent 10,586,321**, 2020.

SELECTED PUBLICATIONS AS LEAD AUTHOR

1. M. Leordeanu and M. Hebert, *A Spectral Technique for Correspondence Problems Using Pairwise Constraints*, Proceedings of the International Conference on Computer Vision (ICCV), 2005.
2. R. T. Collins, Y. Liu, and M. Leordeanu, *Online Selection of Discriminative Tracking Features*, IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 27(10): 1631–1643, 2005. Ranked 1st in Computer Science; Impact Factor: 24.314.
3. M. Leordeanu, R. Sukthankar, and C. Sminchisescu, *Generalized Boundaries from Multiple Image Interpretations*, IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 36(7): 1312–1324, 2014. Ranked 1st in Computer Science; Impact Factor: 24.314.
4. M. Leordeanu, R. Sukthankar, and M. Hebert, *Unsupervised Learning for Graph Matching*, International Journal of Computer Vision (IJCV), 96(1): 28–45, 2012. Q1 Journal; Impact Factor: 13.369.
5. M. Leordeanu, M. Hebert, and R. Sukthankar, *An Integer Projected Fixed Point Method for Graph Matching and MAP Inference*, Advances in Neural Information Processing Systems (NeurIPS/NIPS), 2009.
6. M. Leordeanu, M. Hebert, and R. Sukthankar, *Beyond Local Appearance: Category Recognition from Pairwise Interactions of Simple Features*, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2007.
7. M. Leordeanu, R. Sukthankar, and C. Sminchisescu, *Efficient Closed-Form Solution to Generalized Boundary Detection*, European Conference on Computer Vision (ECCV), 2012.
8. 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.
9. M. Leordeanu, A. Zanfir, and C. Sminchisescu, *Semi-supervised Learning and Optimization for Hypergraph Matching*, International Conference on Computer Vision (ICCV), 2011.
10. M. Leordeanu and M. Hebert, *Smoothing-based Optimization*, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), USA, 2008.
11. M. Leordeanu and C. Sminchisescu, *Efficient Hypergraph Clustering*, International Conference on Artificial Intelligence and Statistics (AISTATS), 2012.
12. M. Leordeanu and R. Collins, *Unsupervised Learning of Object Features from Video Sequences*, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2005.
13. M. Leordeanu and M. Hebert, *Efficient MAP Approximation for Dense Energy Functions*, International Conference on Machine Learning (ICML, Rank A+), USA, 2006.
14. M. Leordeanu, A. Radu, S. Baluja, and R. Sukthankar, *Labeling the Features, Not the Samples: Efficient Video Classification with Minimal Supervision*, AAAI Conference on Artificial Intelligence, 2016.
15. A. Nicolicioiu, I. Duță, and M. Leordeanu, *Recurrent Space-Time Graph Neural Networks*, Advances in Neural Information Processing Systems (NeurIPS), 2019.

RESEARCH ARCHITECT IN ARTIFICIAL INTELLIGENCE IN INDUSTRY

1. Collaboration with FORDAQ

Led a four-person research and development team working on Artificial Intelligence and Computer Vision solutions for the automation of the timber industry, **serving clients worldwide, particularly in the United States.**

In 2019, together with FORDAQ, I secured a **two-year European-funded project (POC / 524/2/2, €1.2 million)**, entitled: "**Neural Grader** – Automated System for Semantic Analysis and Classification of Lumber in Images Using Efficient Computer Vision Methods and Deep Neural Networks."

This collaboration resulted in: **Three U.S. patents**, A commercial software system **(TallyExpress), More than 150** active customers **in the United States.**

2. Collaboration with BITDEFENDER

Led a four-person research team consisting of: **Elena Burceanu, Ph.D, Emanuela Haller, Ph.D, Iulia Duță** (currently a Ph.D. student at the **University of Cambridge), Andrei Nicolicioiu** (Ph.D. student at the **MILA Quebec Artificial Intelligence Institute**).

The team achieved state-of-the-art results in Machine Learning and Computer Vision, published in leading conferences and journals, including: **NeurIPS, TPAMI, ICCV, IJCAI, ECCV, BMVC. U.S. Patent Application** with Bitdefender:

Burceanu, E., Haller, E., Leordeanu, M., Prejbeanu, R., and Cernat, C.D., Bitdefender IPR Management Ltd., 2023. *Systems and Methods for Cybersecurity Using Self-Supervised Machine Learning for Consensus Building*. U.S. Patent Application No. 17/656,644.

3. Collaboration with ARNIA

Led research teams on various Artificial Intelligence projects involving medical applications, autonomous vehicles, and document forgery detection, serving clients in **South Korea and Germany**. Two resulting **publications at leading international conferences** include:

Naiden, A., Paunescu, V., Kim, G., Jeon, B., and Leordeanu, M. (2019). *Shift R-CNN: Deep Monocular 3D Object Detection with Closed-Form Geometric Constraints*. **IEEE International Conference on Image Processing (ICIP).**

Condrea, F., Ivan, V.A., and Leordeanu, M. (2020). *In Search of Life: Learning from Synthetic Data to Detect Vital Signs in Videos*. In *Proceedings of the **IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPR Workshops).***

4. Collaboration with SIEMENS

Supervision of **Florin Condrea** (Ph.D. and Artificial Intelligence Research Engineer at Siemens), together with **Dr. Saikiran Rapaka (Siemens, Princeton)** and **Dr. Lucian Itu (Siemens, Brașov**), on various Artificial Intelligence projects in medical image analysis. Among other publications, this collaboration resulted in an article published in a prestigious journal:

Florin Condrea, S. Rapaka, L. Itu, P. Sharma, J. Sperl, A.M. Ali, and M. Leordeanu. *Anatomically Aware Dual-Hop Learning for Pulmonary Embolism Detection in CT Pulmonary Angiograms*. **Computers in Biology and Medicine, 2024 (Q1 Journal, Impact Factor: 7.7)**.

INVITED TALKS

Invited Speaker, *AI, Data and Robotics Forum (ADRF25)*, Stavanger, Norway, September 2025.

Visiting Professor, *University of Trento, Italy*, invited to teach a short doctoral course based on my book *"Unsupervised Learning in Space and Time"*, September 2023.

"From a Research Laboratory in Romania to Global Industry," presentation delivered before distinguished representatives of the **Ministry of Education**, **Ministry of Research**, and **Ministry of Defense** at the **Romanian Parliament**, December 2022.

Invited Speaker, *Autumn School on Machine Learning and Vision for Industrial Applications*, Norway, October 2021.

Since 2009, I have delivered **more than 50 invited talks** at conferences, summer schools, and research laboratories, including:

- **Google AI**, Mountain View, California, USA.
- **Visual Geometry Group (VGG)**, led by **Andrew Zisserman**, University of Oxford, United Kingdom.
- **Google DeepMind**, London, United Kingdom.
- **Computer Vision Group**, led by **Kostas Daniilidis**, University of Pennsylvania, USA.
- **Computer Vision Group**, led by **Ioannis Kakadiaris**, University of Houston, USA.
- **Computer Vision Group**, led by **Ioannis Stamos**, City University of New York, USA.
- **TEDxUPB**, 2018.

SPECIAL GUEST ON EDUCATIONAL AND SCIENTIFIC TELEVISION AND RADIO PROGRAMS

Special guest on numerous national television and radio programs, participating in extensive interviews and discussions on **Artificial Intelligence**, with the aim of increasing public awareness and understanding of this important field, its current limitations, and its vast potential benefits for society.

A complete list of programs is available at:

https://sites.google.com/site/mariusleordeanu/talks-and-tv-shows

Selected Programs (also available on YouTube)

- **TVR1 – "Critical Point"** (live broadcast), one-hour discussion on **"AI or Surrogate in Education"**, December 2024.
- **TVR – "The Second Romania"** (live broadcast), one-hour discussion on science and cultural identity, April 2024.
- **Antena 1 – "Night Observer"** (live broadcast), interview with **Marius Pancu**, December 2023.
- **Radio România Actualități** – live appearances on **"Friends from the Radio"** (2022) and **"Among Friends"** (2020).
- **TVR1** – host of the television series **"Authentic Romania"**, Episode 2, December 2019.
- **TVR2 – "A Second Emigration"**, January 2016.
- **Digi24 – "Bonton"**, February 2015.
- **Digi24 – Digipedia Science – "The Limits of Perception"**, hosted by **Alexandru Mironov**, April 2015.
- **Discovery Channel – "A Career in Science"**, October 2014.

AREA CHAIR AT LEADING ARTIFICIAL INTELLIGENCE CONFERENCES

Area Chair, International Conference on Computer Vision (ICCV), 2026, 2025, and 2019. **Rank A+**.
Area Chair, **IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)**, 2026, 2025, and 2020. **Rank A+**.
Area Chair, **European Conference on Computer Vision (ECCV)**, 2026 and 2020. **Rank A**.

Area Chair, **Winter Conference on Applications of Computer Vision (WACV)**, 2027 and 2018. **Rank A**.
Senior Program Committee Member, **International Joint Conference on Artificial Intelligence (IJCAI)**, 2026, 2024, 2022, and 2020. **Rank A+**.

MEMBER OF PRESTIGIOUS EDITORIAL BOARDS

Guest Editor, ***International Journal of Computer Vision*** (**IJCV**) – Special Issue on **Embedded Vision**, 2025. Impact Factor: **11.6**.
Editor, ***IEEE Transactions on Pattern Analysis and Machine Intelligence*** (**TPAMI**). Impact Factor: **24.34**.
Editor, ***Computer Vision and Image Understanding*** (**CVIU**). Impact Factor: **4.8**.
Editor, ***Machine Vision and Applications*** (**MVA**). Impact Factor: **3.3**.
Guest Editor, *"Sensors and Techniques for 3D Object Modelling"*, Sensors, 2020. Impact Factor: **3.8**.

PUBLISHED BOOKS, COMPOSED MUSIC, AND COLLABORATIONS IN AI ART

Artificial Intelligence and Art Projects

1. PAINT WITH ME - Real-Time Human–AI Interactive Art System

Marius Leordeanu, Vlad Licăreț, Cristina Lazăr

"Paint with Me" –, Installed and operational at the **Kunstsilo Museum**, Kristiansand, Norway, from **May 11, 2026 – Present**. This unique system allows visitors to create paintings in real time by moving their hands in the air on a large **10 × 10 meter screen**, generating artwork in the style of renowned international and Nordic painters.\

2. MAIA IN FOCUS - A Non-Verbal Chat for Real-Time Human–AI Interaction

Cristina Lazăr, Dragoș Costea, Alina Marcu, and Marius Leordeanu

Presented at the **Annual Art and Science Exhibition – Neo Art Connect (NAC 2024)**.

Technical Publication: D. Costea, A. Marcu, C. Lazar and M. Leordeanu, *"Maia: A Real-Time Non-Verbal Chat for Human–AI Interaction"* (initial version published on arXiv, 2024).

https://www.hauteculturemag.ro/maia-aduce-arta-viitorului-conectata-la-emotiile-prezentului.html

3. BETWEEN WORLDS - Human-AI generated visual art

Dragoș Costea, Cristina Lazăr and Marius Leordeanu

Selected and exhibited at **Artbox.Project Miami 3.0**, (Miami, December 2022), **Artbox.Project – Nicoleta Gallery** (Berlin, 2024) and **Artbox.Project – Thomson Gallery** (Zurich, 2024).

4. SMILE PROJECT - *Deep Immersive Art with Real-Time Human–AI Interaction*

Cristina Lazăr, Nicolae Roșia, Petru Lucaci and Marius Leordeanu

https://sites.google.com/view/smile-project

Presented at:

- **National Festival of Young Artists – Diploma** (October 2019)
  https://diplomafestival.ro/proiectulolimbei
- **Binar National Festival** (November 2019)
  https://institute.ro/digital/binar-2019-5367.html
- **ArtWalkStreet Festival**, exhibited on **Calea Victoriei** and **Revolution Square**, Bucharest city center (September 2019).

SCIENTIFIC AND POPULAR SCIENCE BOOKS

Marius Leordeanu, "*Unsupervised Learning in Space and Time: A Modern Approach for Computer Vision using Graph-based Techniques and Deep Neural Networks".* Springer Nature, May 2020. 297 pages. ISBN: 978-3-030-42127-4

According to BookAuthority.org, it is the best-selling book worldwide on **unsupervised learning** published since 2020 and the **15th best-selling book on the topic of all time**.

Marius Leordeanu *"My Name is Blue"* Valea Verde Publishing House, 2016, 178 pages. ISBN: 606-8834-04-7

Available at: https://www.librariaeminescu.ro/ro/isbn/606-8834-04-7/Marius-Leordeanu__Ma-numesc-albastru.html

POETRY BOOKS

Marius Leordeanu, *"Fiintele Soarelui"***,** Curtea Veche Publishing, 2024. ISBN: 978-606-44-1819-7
Available at: https://www.curteaveche.ro/p/fiintele-soarelui

Marius Leordeanu *"Odiseu si Destinul"*, Valea Verde Publishing House, 2024. ISBN: 978-606-8834-65-8
Available at: https://librariaeminescu.ro/poezii/odiseu-si-destinul-p-355141

Marius Leordeanu *"Povestea unui Cuvant",* Papirus Media, 2013, 76 pages. ISBN: 606-8137-39-1
Available at: https://www.librariaeminescu.ro/ro/isbn/606-8137-39-1/Marius-Leordeanu__Povestea-unui-cuvant.html

MUSICAL COMPOSITIONS

Available on major music streaming platforms (**Spotify, Apple Music, YouTube Music**, and others), as well as on my YouTube channel: https://www.youtube.com/user/MariusLeordeanu

Music Collection: "Next Generation"
Composition, music production, and lyrics by **Marius Leordeanu**.
Available on all major online music platforms (**Spotify, Apple Music, YouTube Music**, and others).

PROFESSIONAL COLLABORATIONS IN MUSIC PROJECTS

Album: "Supersonic" and Single: "Cosmic Attraction"
Composition and Performance: Marius Leordeanu
Produced by: Ciprian Lemnaru and Marius Leordeanu

Recorded at: Kemper Music Studios, Bucharest

Available on **all major music platforms**, including:
Spotify: https://open.spotify.com/album/6SPhzD088xm7xfqvIvzrg7
YouTube: https://youtube.com/playlist?list=OLAK5uy_mbGgwl0Mr08Ny0H9U8WkWzGtTTflMEWz0