

Marius Pesavento

Professor Dr.-Ing.

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IEEE membership no.: 41287263

Education

- 1992 – 1999 **Diploma studies;** Department of Electrical Engineering, Ruhr-Universität Bochum, Germany, Degree: Dipl.-Ing
- 2000 – 2001 **Master studies:** Communication Research Lab (CRL), Department of Electrical Engineering and Information Sciences, McMaster University, Hamilton, Ontario, Canada, Degree: Ms.-Eng. – *With distinction*
- 2001 – 2005 **Doctorate research:** Signal Theory Group, Department of Electrical Engineering and Information Sciences, Ruhr-Universität Bochum, Germany, Degree: Dr.-Ing. – *With distinction*
- Doctorate Advisor: Prof. Johann Böhme

Experience

- 2001 – 2005 Research Assistant, Signal Processing Group, Ruhr-Universität Bochum
- 2005 – 2007 Research Engineer for digital signal processing, FAG Industrial Services GmbH (enterprise of the Schaeffler-Group), Aachen, Germany [<http://www.fis-services.de>]
- 2007 – 2009 Head of Signal Processing Section, mimoOn GmbH, Duisburg, Germany (today ComAgility) [<http://www.mimoOn.de>]
- 2010 – 2013 Assistant Professor (W1) for Robust Signal Processing, Communication Systems Group, Darmstadt University of Technology, Darmstadt, Germany
- 2013 – now Full Professor (W3), Head of Communication Systems Group, TU Darmstadt, Germany

Research Interests

- Sensor array and statistical signal processing
- Multiuser MIMO communication networks
- Optimization methods
- Graph and distributed signal processing
- Model-aided machine learning

Awards and honors

- 2023 Co-author of the paper that received the Best Student Paper Award (2nd place) at the 2023 IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (IEEE CAMSAP 2023), Los Sueños, Costa Rica, 2023.
- 2015 Co-author of the paper (<https://ieeexplore.ieee.org/document/7051831>) that received the Best Paper Award at the 19-th ITG International Workshop on Smart Antennas (WSA 2015), Ilmenau, Germany, 2015.

- 2014 Co-author of the paper (doi:10.1109/SAM.2014.6882328) that received the Best Student Paper Award (3rd place) at the Eight IEEE Sensor Array and Multichannel Signal Processing Workshop, A Coruña, Spain, 2014.
- 2010 Co-author of the paper (doi:10.4108/icst.crowncom.2011.245766) that received the Best Paper Award at the 5th International ICST Conference on Cognitive, Radio Oriented Wireless Networks (CrownCom 2011), Cannes, France, 2011.
- 2006 Young Author Best Paper Award 2005 (doi:10.1109/TSP.2002.801929), Signal Processing Society, Institute of Electrical and Electronics Engineers (IEEE), 2002.
- 2006 Heinrich-Kost-Price 2006, Gesellschaft der Freunde der Ruhr-Universität Bochum.
- 2003 ITG Preis 2003, Verband der Elektrotechnik Elektronik Informationstechnik (VDE).
- 2001 Outstanding Thesis Research Award, McMaster University.

Academic activities

- IEEE SPS Regional Director-at-Large for Region 8, since January 2025.
- Technical Committees IEEE Technical Committee (TC) “Sensor Array and Multichannel Signal Processing” (Vice-Chair since January 2025, member 2012 – 2017), IEEE TC member “Signal Processing Theory and Methods” (since 2021), Member of the EURASIP Technical Area Committee (TAC) “Signal Processing for Multisensor Systems” (since 2016), Vice-chair (2019 – 2021), Chair (2022 – 2024), Past-Chair 2025, EURASIP TAC member “Signal Processing for Communications and Networking” (2016 – 2018), EURASIP TAC member “Theoretical and Methodological Trends in Signal Processing” (2021 – 2023).
- Conferences Technical Co-Chair EUSIPCO 2019, Technical Co-Chair IEEE SAM 2014, Technical Area Chair Asilomar Conference 2012, Technical Area Chair Asilomar Conference 2020, Finance Chair IEEE SPAWC 2013, Finance Chair IEEE CAMSAP 2015, Co-Organizer STATOS workshops 2013 (Darmstadt), 2015 (Budapest), 2018 (Rome), 2022 (Belgrade).
- Editorial Boards Deputy Editor-in-Chief IEEE Open Journal of Signal Processing (since January 2025, Senior Area Editor 2019 – 2024), Editorial board member IEEE Transactions on Signal Processing (2012 – 2016), Editorial Board member EURASIP Signal Processing (AE since 2011, Subject editor since 2024)
- Guest Editor of the IEEE Journal of Selected Topics in Signal Processing, Special Issue: Array Signal Processing for Angular Models in Massive MIMO Communications (F. Gao, Z. Tian, E. G. Larsson, M. Pesavento and S. Jin), 2019 [<https://doi.org/10.1109/JSTSP.2019.2938880>].
- Section Editor Academic Press Library in Signal Processing, Volume 7: Array, Radar and Communications Engineering (R. Chellappa and S. Theodoridis), Section 3: Sensor Array Processing (M. Pesavento), 2018, ISBN: 9780128118887.
- Lead Guest Editor EURASIP Signal Processing Special Issue: Advances in Sensor Array Processing in Memory of Alex B. Gershman (M. Pesavento, Y.I. Abramovich, F. Gini, N. Sidiropoulos, A.M. Zoubir), 2013, [<https://doi.org/10.1016/j.sigpro.2013.07.003>].
- Guest Editor of the EURASIP Journal on Advances in Signal Processing, Special Issue: Advances in Two-Dimensional Angle-of-Arrival Processing for Localization and Communications (L. Mailaender, S. Affes, M. Juntti, M. Pesavento), 2011 [<https://doi.org/10.1186/1687-6180-2011-94>].

Talks and Tutorials (recent and upcoming)

- Tutorial Speaker Nato Lecture series on SET-337 *Advances in Array Calibration for improved ESM Sensor Performance*, Title: “Tensor-based Array Calibration Methods,” April 23-24, 2025 at John Hopkins University, Baltimore, (USA), June 3-4, 2025 at ISL in Saint-Louis (France) and on June 5-6, 2025 at FKIE in Wachtberg (Germany)
- Tutorial Speaker Nato Lecture series on SET-337 *Advances in Array Calibration for improved ESM Sensor Performance*, Title: “Direction-of-Arrival Estimation and Offset Synchronization in Partly Calibrated Arrays,” April 23-24, 2025 at John Hopkins University, Baltimore (USA), June 3-4, 2025 at ISL in Saint-Louis (France) and on June 5-6, 2025 at FKIE in Wachtberg (Germany)
- Keynote Speaker at the International Workshop on Resilient 6G Networks (WResNet 6G), Satellite workshop of IEEE WCNC 2025, Title: “Model assisted deep learning for resilient 6G networks”, 24-27 March, 2025, Milan, Italy
- Speaker Berlin 6G Conference, Special Session on Machine Learning for 6G, Title: “Model assisted deep learning for resilient 6G networks”, Berlin, July 3, 2025
- Keynote Speaker Symposium on “New trends in signal processing with applications” at the Montenegrin Academy of Sciences and Arts, June 2024.
- Tutorial Speaker IEEE SAM 2020: “Four Decades of Array Signal Processing Research: An Optimization Relaxation Technique Perspective”, M. Pesavento, M. Trinh-Hoang, M. Viberg, (slides).
- Tutorial Speaker EUSIPCO 2020: “Four Decades of Array Signal Processing Research: An Optimization Relaxation Technique Perspective”, M. Pesavento, M. Trinh-Hoang, M. Viberg, (slides).
- Tutorial Speaker EUSIPCO 2017: “Exploiting structure and pseudo-convexity in iterative parallel optimization algorithms for real-time and large scale applications”, M. Pesavento, Y. Yang, (slides).
- Tutorial Speaker IEEE ICASSP 2015: “Mixed-integer programming in signal processing and communications”, M. Pesavento, Y. Cheng, M.E. Pfetsch, (slides).