Prof Danilo P. Mandic, PhD, MSc, MEng (Hons), FIEEE

Contact Details

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Education

PhD in Signal Processing, Imperial College London, UK 1997–1999
MSc in Signal Processing, University of Banjaluka, Yugoslavia 1990–1992
MEng in Electronic Engineering, UG degree, University of Banjaluka, Yugoslavia 1982–1987

Employment History

Professor of Machine Intelligence, Imperial College London, UK 2023–
Professor of Signal Processing, Imperial College London, UK 2011–2022
Reader in Signal Processing, Imperial College London, UK 2004–2011
Senior Lecturer in Signal Processing, Imperial College London, UK 2002–2004
Senior Lecturer in Computing, University of East Anglia, Norwich, UK 2000-2001
Lecturer in Computing, University of East Anglia, Norwich, UK 1999–2000
Research Assistant, Imperial College London, UK 1997–1999
Lecturer in Signal Processing, University of Banjaluka, Yugoslavia 1988–1997

Visiting Positions

Visiting Scientist, RIKEN, Brain Science Institute, Tokyo, Japan 2008–2016
Visiting Professor, University of Westminster, London, United Kingdom 2006–2008
Frontier Researcher, RIKEN, Brain Science Institute, Tokyo, Japan 2005
Guest Professor, Katholieke Universiteit Leuven, Leuven, Belgium 2002–2003
Visiting Academic, Imperial College London, UK 2000–2001
British Chevening Visiting Scholar, Imperial College London, UK 1996–1997

Teaching

Statistical Signal Processing and Inference, 3rd year UG course 2022–
Machine Intelligence for Finance, 4th year UG course 2024–
Adaptive Signal Processing and Machine Intelligence, 4th year UG & MSc course 2016–
Signal Processing and Machine Learning for Finance, 4th year UG course 2019–2024
Spectrum Estimation and Adaptive Filters, 4th year UG & MSc lecture course 2005–2015
Advanced Signal Processing, 3rd year UG lecture course 2002–2021
Digital Signal Processing, MSc lecture course 2009–2010
Communications I, 1st year UG study groups 2005–
Signals and Linear Systems, 2nd year UG study groups 2002–2004
Personal Tutorials, 2nd year UG 2002–

Student supervision

PhD student supervision. Currently supervising 12 PhD students and 3 RAs
Supervised more than 50 successful past PhD students, 1999–
MEng and MSc student supervision. 80+ past MSc and 80+ MEng/BEng FYPs 2002–

Departmental Duties

Director of the Artificial Intelligence and Data Analytics Lab (AIDA Lab) 2024–
Director of the Financial Signal Processing Lab 2015–2023
IEEE Student Branch coordinator 2013–
Theme Leader, University Defence Research Centre in Signal Processing (UDRC) 2008–2013
Smart Environments Laboratory, Director, Steering Committee & Project Coordination 2006–
1st and 2nd year UG examinations officer 2009–
Plagiarism Committee, Member then Chair 2008-
Departmental Safety Coordinator 2007–2008
COMMSP Research Seminar Organiser 2003–2012

Membership of Professional Bodies

Appointed on the Council of Experts, United Nations International Council on Environmental Economics and Development (ICEED), https://i-ceed.org/ 2025–
President, *International Neural Network Society (INNS)* 2023–2024
Distinguished Lecturer, *IEEE Computational Intelligence Society* 2023–2025
Distinguished Lecturer, *IEEE Signal Processing Society* 2023–2024
Fellow of the Industry Academy, International Artificial Intelligence Industry Alliance (AIIA) 2024–

Advisory Board, *PhD degree in Electrical and Information Eng.*, Polytechnic of Bari, Italy 2024–
International Evaluator for Control Science and Engineering Discipline, Harbin Engineering University, Harbin, China 2022–
Advisory Board, *MSc in Computational Finance Programme*, Greenwich University, UK 2022–
Advisory Board, *Science and Technology Select Committee: Governance on Artificial Intelligence*, House of Commons, UK 2022
Task Force on *Complex Valued Neural Networks* (Chair), IEEE Comput. Intellig. Soc. 2022–
Advisory Board, *Institute of Mathematical Physical and Computational Sciences*, University of Coventry, UK 2021–
Advisory Board, *TalisLife*, an international company, Switzerland 2021–
Permanent Panel Member, *Laureate Awards Scheme*, Irish Research Council, Ireland 2021–
Chair, *Task Force on Complex and Hyper-Complex Neural Networks*, IEEE Computational Intelligence Society 2021–
Assessor for 2021 Endeavour Fund Smart Ideas Concepts for the New Zealand Ministry of Business, Innovation and Employment (MBIE) 2019
Accreditation Committee for the MEng and MSc degrees (external member, 6-yearly accreditation by QANU), Department of Computer Science, University of Groningen, The Netherlands, 2019
Fellows Committee, IEEE Computational Intelligence Society, Member, 2019–
Vice-President for Public Relations, International Neural Networks Society (INNS) 2019–2020
Member, Autonomous Machine Learning chapter, International Neural Networks Society 2019–
Liaison between the IEEE Signal Processing Society and Wiley publishers 2018–
Region 8 representative for the IEEE SPS TC on Bio-imaging and Signal Processing TC 2018–
Member of the Big Data special interest group (Big Data SIG), IEEE SPS 2018–
Bio-imaging and Signal Processing Technical Committee Member, IEEE Sig. Proc. Soc. 2018–
Education Technical Committee Member, IEEE Signal Processing Society 2018–
Core Member of the Machine Learning Initiative, *Imperial College London*, London, UK 2017–
Permanent Panel Member, *Laureate Awards Scheme*, Irish Research Council, Ireland 2017–2019
Advisory Committee for the *Artificial Intelligence Education Program* KAIST, Korea 2017–
Task Force on *Computational Audio Analysis*, IEEE Computational Intelligence Society 2015–
Co-Chair of the *Big Data Analytics* chapter, International Neural Networks Society (INNS) 2014–
Fellow of the IEEE 2013–
APSIPA Technical Committee on *Signal and Information Processing* 2013–
Board of Governors of the International Neural Networks Society (INNS) 2013–
Panstanford Publishing, advisory editorial panel on communications and signal processing 2012–
FWO (Research Foundation Flanders - Belgium), permanent panel member 2011–2015
EPSRC Peer Review College, United Kingdom 2007–2009 & 2010–
Technical Committee *Signal Processing Theory and Methods*, IEEE Signal Proc. Soc. 2011–2016
Task Force on *Smart Grid*, IEEE Computational Intelligence Society 2010–
Task Force on *Complex Valued Neural Networks* (Co-Chair), IEEE Comput. Intellig. Soc. 2010–2021
Technical Committee on *Signal Analysis for Machine Intelligence*, Int. Assoc. Pattern Rec. 2007–
Visiting Lecturer, for the "Brain Gain Programme" within World University Service 2005-2006
Technical Committee *Machine Learning for Signal Processing*, IEEE Signal Proc. Soc. 2005–2008
Senior Member of the IEEE 2003–
Technical Committee on *Neural Networks for Signal Processing*, IEEE Signal Proc. Soc. 2001–2004
London Mathematical Society 2000–

Journal Editorship

Associate Editor

IEEE Signal Processing Magazine, Senior Editorial Board 2022–2024
Elsevier Neural Networks 2018–2020
Journal of Concussion 2017–2019
IEEE Transactions on Signal and Information Processing over Networks 2014–2018
IEEE Signal Processing Magazine 2011–2017
IEEE Transactions on Neural Networks and Learning Systems 2008–2013
IEEE Transactions on Signal Processing 2007–2010
IEEE Transactions on Circuits and Systems II 2002–2004

Journal of Signal Processing Systems 2002–2004
International Journal of Mathematical Modelling and Algorithms, Springer 2002–2009

Guest Editor for special issues of journals

Artificial Intelligence for Education: A Signal Processing perspective, IEEE Signal Processing Magazine, in progress
"Graph Representation Learning", Neural Networks, in progress
"AI-Generated Content for Multimedia", IEEE Transactions on Circuits and Systems for Video Technology, vol. 34, no. 8 August
"Innovation Starts with Education", IEEE Signal Processing Magazine, May 2021
"Deep Neural Network Representation and Generative Adversarial Learning", Elsevier Neural Networks, vol. 127, July issue 2021
"Information Theory and Complexity Science Approaches to Health Conditions and Cognitive Decline", Entropy, vol. 21, October 2019
"Information Theory Applied to Physiological Signals", Entropy, vol. 20, no. 82, 2018
"Hypercomplex Signal Processing", Signal Processing, vol. 136C, no. 7, 2017
"Financial Signal Processing and Machine Learning for Electronic Trading", IEEE Journal on Selected Topics in Signal Processing, vol. 10, no. 6, 2016
"Signal Processing in Smart Electric Power Grid", IEEE Journal on Selected Topics in Signal Processing, vol. 7, no. 4, 2014
"Complex- and Hypercomplex-Valued Neural Networks", IEEE Transactions on Neural Networks and Learning Systems, vol. 35, no. 9, 2014
"Advances in Adaptive Signal Processing", IEICE Trans. (Japan) vol. E94-A, no. 8, 2011
"Advances in Theories of Signal Processing", IEICE Trans. (Japan) vol. E92-A, no. 3, 2009
"Computational Biology Inspired Neural Networks", Neural Networks vol. 21, no. 6, 2008
"Blind Signal Processing", Neurocomputing vol. 71, no. 10-12, 2008
"Advances in Data Fusion", Journal of Signal Processing Systems vol. 49, no. 2, 2007
"Machine Learning for Signal Processing", Journal of Signal Proc. Sys. vol. 45, no. 1-2, 2006

Patents

Detection and monitoring of respiratory conditions with photoplethysmography (PPG), Inventors: H. Davies, D. P. Mandic, and N. Peters
Patent application, PCT/GB2023/051987 August 2023

Electrocardiogram Apparatus and Method, Inventors: W. von Rosenberg, V. Goverdovsky, T. Chanwimalueang, and D. P. Mandic, filed in October 2017
UK Patent GB2567648 (granted), 14 September 2022
US patent US11633142B2 (granted) 25 April 2023

Apparatus, Method and Computer Program for Treating Benign Paroxysmal Positional Vertigos, Inventors: B. Seemungal and D. P. Mandic
Submitted to the UK Patent Office, November 2020

Digital self–interference eliminating method of zero–medium–frequency full–duplex transceiver, Inventors: Y. Xia, Z. Li, W. Pei, K. Wang, and D. P. Mandic
Chinese Patent, CN 108111186 A, (granted) April 2019

Frequency Estimation, Inventors: D. P. Mandic, Y. Xia, and D. Dini
(granted), 12 June 2018
UK Patent GB 2506626 (granted), 9 January 2018
European Patent EP2904407B1 (granted) 8 April 2020

Compensation method and apparatus for transmitter IQ imbalance, Inventors: Y. Xia, W. Pei, F. Zhao, Z. Li, and D. P. Mandic
Chinese Patent, CN 104717172 B, (granted) 20 March 2018

Dual Modality Sensor with Biosensing Electrodes, Inventors: D. Looney, V. Goverdovsky, and D. P.

Mandic

US patent (granted), US10463309B2, 5 November 2019
European patent (granted) EP3094235B1 29 April 2020

A Hearing Aid Adapted for Detection of Brain Waves and a Method for Adapting Such a Hearing Aid, Inventors:. P. Kidmose, D. P. Mandic, M. Ungstrup, D. Looney, C. Park, M. L. Rank

US Patent US9025800B2 (granted) 5 May 2015
Danish Patent and Trademark Office, Patent PA-200970060 (granted), 8 July 2012

Keynotes, Tutorials, Featured talks

2025: **Keynote:** *Interpretable AI: A missing link to critical decision making and eHealth*, RIKEN AIP Workshop on Tensor Representation for Machine Learning, Tokyo, Japan, August 2025.
Keynote: *AI-Powered Education: Unlocking the future of learning and assessment*, IEEE International Joint Conference on Neural Networks, IJCNN'25, AI Innovations for Education Workshop, Rome, Italy, July 2025.
Tutorial: *Interpretable AI: A missing link to eHealth?*, International Conference on Applications of Intelligent Systems (APPIS), Las Palmas, Spain, January 2025.

2024: **Keynote:** *Interpretable Convolutional NNs and Graph CNNs: Role of domain knowledge*, The 23rd IEEE/WIC International Conference on Web Intelligence and Intelligent Agent Technology, Bangkok, Thailand, December 2024.
Keynote: *Interpretable Convolutional NNs and Graph CNNs: Role of domain knowledge*, 31st International Conference on Neural Information Processing (ICONIP), Aukland, New Zealand, December 2024.
Keynote: *The impact of artificial intelligence on our future – Opportunities and threats*, Organised by the Organisation for Economic Co-operation and Development (OECD), at the OECD: Global Partnership on Artificial Intelligence Summit, Belgrade, Serbia, December 2024
Keynote: *Hearables: Real World Applications of AI for eHealth*, The Institution of Engineering and Technology (IET), London, UK, November 2024.
Keynote: *Machine intelligence for eHealth: Hearables for 24/7 doctorless hsopitals*, Hearing4All International Symposium on the Future of Hearing, Hannover, Germany, November 2024.
Distinguished Lecture: *Machine Intelligence for eHealth: Hearables for 24/7 Doctorless Hospitals*, IEEE Computational Intelligence Society, Indian Chapter, Mohan Babu University, India, November 2024.
Keynote: *Machine Intelligence for eHealth: Hearables for 24/7 Doctorless Hospitals*, AI-4-Life: Biotech Future Forum, Belgrade, Serbia, October 2023.
Keynote: *Hearables: Next generation solutions for eHealth and 24/7 Doctorless Hospitals?*, 11th International Conference on Micro-Nanoelectronics, Nanotechnology and MEMS (Micro Nano 2024), Lemnos, Greece, October 2024.
Keynote: *Title: Interpretable Convolutional NNs and Graph CNNs: Role of domain knowledge*, Graph Signal Analysis and Learning Workshop (GSAL-24), Osaka, Japan, July 2024.
Distinguished Lecture: *Machine Intelligence for eHealth: Hearables for 24/7 Doctorless Hospitals*, Tokyo University if Agriculture and Technology (TUAT), Tokyo, Japan, July 2024.
Tutorial: *Hypercomplex neural networks for multidimensional data*, IEEE World Congress on Computational Intelligence, Yokohama, Japan, June 2024.
Keynote: *Innovation starts with Education: The role of Generative AI*, in the Workshop on AI Innovations for Education: Transforming teaching and learning through cutting-edge technologies, IEEE World Congress on Computational Intelligence, Yokohama, Japan, June 2024.
Distinguished Lecture: *Interpretable Convolutional NNs and Graph CNNs: Role of domain knowledge*, Waseda University, Kyushu Campus, Fukuoka, Japan, June 2024.
Distinguished Lecture: *Interpretable Convolutional NNs and Graph CNNs: Role of domain knowledge*, IEEE SPS Student Branch, Indian Institute of Technology, Kharagpur, India, June 2024.
Victoria Rodellar-Biarge Keynote Lecture: *Interpretable Convolutional NNs and Graph CNNs: Role of domain knowledge*, The 32nd Italian Workshop on Neural Networks, Vietri sul Mare, Italy, June 2024.
Distinguished Lecture: *Interpretable Convolutional NNs and Graph CNNs: Role of domain knowledge*, IEEE Computer Intelligence Society, Victorian Section, Melbourne, Australia, May

2024.

Featured Talk: *Explainable NNs and Graph NNs*, RIKEN AIP Institute, Tokyo, Japan, May 2024.

Keynote: *Explainability in Neural Networks*, The Second Summer School of the N3BG Group, "Neuroinformatics, Neural networks and Neurocomputers", Sofia, Bulgaria, May 2024.

Tutorial: *Hearables: Real world applications of interpretable AI for eHealth*, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP'24), Seoul, South Korea, April 2024.

Featured Talk: *AI for Education: To prompt or not to prompt*, ICASSP 2024 Panel "The Impact of Recent ML and AI Advancements in Signal Processing Education and Research", Seoul, South Korea, April 2024.

Keynote: *Innovation starts with Education: A personal perspective of the use of AI in education*, IEEE Signal Processing Seasonal School on hands-on Arduino programming and DSP Applications, Busia, Uganda, March 2023.

Keynote: *Interpretable AI: The multi-graph tensor network approach*, International Conference on Applications of Intelligent Systems (APPIS), Las Palmas, Spain, January 2024.

2023: **Keynote:** *Interpretable convolutional NNs and graph NNs: The role of domain knowledge*, Summer School on Machine Learning, University of Chile, December 2023.

Tutorial: *Hearables: Real-world applications of interpretable AI*, IEEE CAMSAP Conference, San Jose, Costa Rice, December 2023.

Keynote: *Hearables: From promoting general wellbeing to doctorless hospitals*, IEEE International Conference on Mechatronics and Automation (ICMA), Harbin, China, August 2023.

Distinguished Lecture: *Hearables: From promoting general wellbeing to doctorless hospitals*, IEEE SPS Seasonal Summer School, Bombay, India, July 2023.

Keynote: *Quo vadis AI: From an industrial revolution to smart classrooms and doctorless hospitals*, International Workshop on the Advances in Machine Learning Applications (AMALEA), Cetraro, Italy, July 2023.

Keynote: *Convolutional neural networks demystified: A matched filtering approach to fully interpretable CNNs*, GTTI Multimedia Signal Processing, Brixen/Bennassone, Italy, January 2023.

Keynote: *Hearables: From promoting general wellbeing to doctorless hospitals*, International Symposium on Applications of Intelligent Systems (APPIS), Las Palmas, Spain, January 2023.

2022: **Keynote:** *Interpretable AI: From Industrial Revolution to Doctorless Hospitals*, Global AI Conference, Gwangju, South Korea, September 2022.

Tutorial: "*Hearables: A New Arena for Artificial Intelligence for Personalised Health*", International Workshop on Advances in Machine Learning (AMALEA), Cetraro, Italy, September 2022.

Tutorial: "*Machine intelligence on graphs*", Winter School on Machine Learning (WISMAL), Las Palmas, Spain, March 2022.

2021: **Keynote:** "*Machine intelligence on graphs*", 2021 Bellairs Workshop on Machine Learning and Statistical Signal Processing for Data on Graphs, Bridgetown, Barbados, December, 2021

Keynote: "*Hearables: From general wellbeing to doctorless hospitals*", 2nd IEEE Workshop on Wearable Sensors and Devices, Artificial Intelligence and Wearables Markets (WSAIM 2021), Rome, Italy, December 2021.

Keynote: "*Hearables: A keyhole into the state of body and mind?*", International MIDEM conference, Ljubljana, Slovenia, September 2021.

Keynote: "*Hearables: From the state of body and mind to doctorless hospitals*", The Imperial Tsinghua Workshop on Circuits and Systems Techniques for Ubiquitous Health Applications in the Era of AI, September 2021.

Tutorial: "*Data Analytics on Graphs: A New Paradigm in Machine Intelligence*", 27th National Conference on Communications (NCC 2021), virtual conference, India, July, 2021.

Keynote: "*Hearables: From in-ear recording of vital signs and neural function to doctorless hospitals*", Mediterranean Conference on Embedded Computing (MECO), Budva, Montenegro, 7 June, 2021.

2020: **Keynote** "*From flat–view linear algebra to tensor decompositions for big data applications*", Intelligent Navigation and Advanced Information Fusion Technology Workshop, Harbin Engineering

University, Harbin, China, 12–13 December, 2020.

Keynote "*Tensors, graphs, and deep networks: Convergence of concepts and ideas*", The Institute of Mathematics and Applications, UK, virtual event, 12 August 2020.

Tutorial "*Recurrent Neural Networks: From universal function approximation to a Big Data tool*", Winter School on Machine Learning (WISMAL), part of the 3rd International Conference on Applications of Intelligent Systems (APPIS), Las Palmas, Spain, January 7–12, 2020.

2019: **Tutorial** "*Tensor Decompositions for Big Data Applications*", The IEEE Joint International Conference on Neural Networks, IJCNN'19, Budapest, Hungary, 14–19 July, 2019.

Keynote "*Smart Data Analytics for smarter Power Grid: Teaching old power systems new tricks*", Montenegro Academy of Sciences and Arts, Podgorica, Montenegro, 11 June 2019.

Keynote "*Hearables: From in-ear sensing of neural function to doctorless hospitals*", a talk in Honour of the 100th Anniversary of University of Ljubljana, Ljubljana, Slovenia, 23 May 2019.

Tutorial "*Tensor Decompositions and Applications: Blessing of dimensionality*", The INNS Big Data and Deep Learning Symposium, Genova, Italy, 16–18 April, 2019.

Tutorial "*Recurrent Neural Networks*", at the Winter School on Machine Learning and the Applications of Intelligent Systems (APPIS'19) Conference, Las Palmas, Spain, 7–12 January, 2019.

2018: **Keynote** "*Hearables solutions for the next generation eHealth*", ENJECT Workshop on Future Connected Health, London, October 2018.

Keynote "*Tensor Networks and their applications in dimensionality reduction and blind signal processing*", 14th International Conference on Latent Component Analysis and Signal Separation, Guildford, United Kingdom, 2–6 July, 2018.

Keynote "*Hearables: Enabling Technologies for Lifelong Learning in E-Health*", Workshop on Next Generation Communication Technologies and Services, University of Banjaluka, Bosnia and Herzegovina, June 2018.

Keynote "*Tensor decompositions for Big Data applications*", The XXXIV Annual Meeting of Electrotechnical Researchers, ET2018, La Sapienza University, Rome, Italy, June 2018.

Keynote "*In-ear sensing for next generation healthcare: The role of Signal Processing*", Montenegrin Academy of Sciences, Podgorica, Montenegro, 11 June, 2018.

Keynote, "*Hearables: Multimodal 24/7 physiological sensing*", The 1st International Conference on Applications of Intelligent Systems (APPIS'18), Las Palmas, Spain, January 2018.

2017: **Keynote** "*Hearables: Continuous 24/7 monitoring of the state of body and mind*", IEEE International Conference on Machine Learning and Applications (ICMLA'17), Cancun, Mexico, December 2017.

Feature Talk, "*Multiway Analysis for Data Science: Blessing of dimensionality*", Data Science and Signal Processing Workshop, Alan Turing Institute, November, 2017.

Feature Talk, "*Tensor decompositions for big data applications*", Special Blue-Green Dream Seminar on Complexity, Urban Development and Big Data, Department of Civil Engineering, Imperial College London, UK, June 2017.

Feature Talk, "*Complexity science for engineering applications*", Special Blue-Green Dream Seminar on Complexity, Urban Development and Big Data, Department of Civil Engineering, Imperial College London, UK, June 2017.

Tutorial, "*Hearables: In-ear EEG and vital signs monitoring of the state of body of mind"*, International Workshop on Brain Inspired Computing, Cetraro, Italy, June 2017.

Keynote, "*Tensor decomposition and applications: Multi-way analysis of big data"*, Workshop on Compressive Sensing and Its Applications (Cs-ICT), Budva, Montenegro, May 2017.

2016: **Keynote**, "*Complexity science for wearable health*", IEEE ISSPIT Conference, Limassol, Cyprus, Dec 2016.

Distinguished lecture, "*Signal processing for wearable health*", IEEE DSP Conference, Beijing, China, Oct 2016.

Tutorial, "*Multiscale signal processing for wearable health: Sleep, stress, and fatigue applications*, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Shanhgai, China, March 2016.

2015: **Keynote**, "*Complexity science for multimodal data*", Big Data at Small Scales Workshop, Imperial College London, 2015.

Keynote, "*Computational intelligence and wearable bodysensor networks*", IEEE ERCIM Workshop, Prague, Czech Republic, Oct 2015.
Keynote, "*Complexity science for 24/7 continuous physiological monitoring*", 7th Annual Translational Medicine Conference (TMED7), Derry, Northern Ireland, Oct 2015.
Keynote, "*Ear-based continuous monitoring of vital signs*", Cardiovascular Mobile Health Conference, Tabarz, Germany, Sep 2015.
Keynote, "*Entropy estimation from multivariate data: Robust assessment of structural complexity*", 30th International Symposium on Computer and Information Sciences, London, UK, Sep 2015.
Tutorial (with V. Goverdovsky and P. Kidmose) "*Unobtrusive brain activity monitoring with in–ear EEG*, International Conference on Brain Informatics & Health, London, Aug 2015.
Tutorial (with V. Goverdovsky) "*Computational intelligence for wearable physiological sensing*", IEEE International Joint Conference on Neural Networks (IJCNN'15), Killarney, Ireland, July 2015.

2014: **Keynote** "*Signal processing for wearable health: challenges and possible solutions*", IEEE Digital Signal Processing Conference (DSP'14), Constantinides Workshop, Hong Kong, China, August 2014.
Keynote "*Trends in biomedical signal processing*", The 6th World Congress of the Ararat International Academy of Sciences, Jerusalem, Israel, October 2014.
Keynote "*Signal Processing for Vector Sensors: Noncircularity, Intrinsic Scales, and Complexity*", IEEE International Symposium on Communication Systems, Networks and Digital Signal Processing, Manchester, UK July 2014.
Keynote "*Ear-EEG: A novel brain monitoring methodology*, IEEE Cognitive Information Processing Workshop, Copenhagen, Denmark
Tutorial, "*Smart Grid, renewable energy, and data processing*", IEEE World Congress on Computational Intelligence (WCCI), July, 2014, Beijing China

2013: **Tutorial** (with S. Douglas) "*Complex-valued adaptive signal processing: Algorithms and applications*", IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), July 2013, Vancouver, Canada

2012: **Tutorial** (with A. Hirose and I. Aizenberg) "*Complex valued neural networks: Theory and applications*", World Congress on Computational Intelligence, WCCI'12, Brisbane, Australia
Plenary "*Multivariate Time-frequency analysis: Data driven approaches*", WIRN'12 Symposium, Salerno, Italy

2011: **Keynote** "*Multivariate empirical mode decomposition*", Institute for Mathematics and Applications (IMA), Hot Topics Workshop *Instantaneous Frequencies and Trends for Nonstationary Nonlinear Data*, Minneapolis, MN, USA
Tutorial "*Frequency estimation in smart grid*", Siemens Corporate Research, Munich, Germany
Tutorial (with A. Hirose and I. Aizenberg) "*Complex valued neural networks: Theory and applications*", International Joint Conference on Neural Networks, IJCNN'11, San Jose, USA
Tutorial (with J. Via, N. Le Bihan and S. Sangwine), "*Quaternion valued signal processing*", in EUSIPCO 2011, Barcelona, Spain.

2010: **Keynote** "*Signal processing for vector sensors: Wind energy applications*", The Marie-Curie SYSWIND Winter School, Dublin, Ireland
Tutorial (with S. Douglas), "*Adaptive signal processing of noncircular complex signals*", The 7th IEEE International Symposium on Wireless Communication Systems (ISWCS'10), York, UK
Tutorial (with A. Hirose and I. Aizenberg), "*Complex valued neural networks: Theory and applications*", International Joint Conference on Neural Networks, IJCNN'10, Barcelona, Spain
Plenary, "*Signal processing for vector sensors: Crossroads of tools and ideas*", International Conference on Signal Processing Systems (ICSPS'10), Dalian, China
Featured Talk, "*Statistical signal processing for noncircular complex signals*", IEEE Chapter Denmark and Technical University Denmark (DTU), Copenhagen, Denmark

2009: **Plenary**, "*Data driven time-frequency decompositions for information fusion*", European Workshop on Advanced Predicitive Sensory-Motor Control (DRIVESCO), Judkrante, Lithuania
Featured Talk, IET & NPL Seminar"*Statistical EM methods for analysing complex systems and structures*", National Physical Laboratories (NPL), London, UK

2008: **Featured Talk**, "*Challenges in complex valued signal processing: Noncircularity and widely linear models*", IEEE C&S Society, Chapter Japan

2007: **Tutorial** (with I. Yamada), "*Machine learning and signal processing applications of fixed point theory*", International Conference on Acoustics, Speech and Signal Processing (ICASSP), Honolulu, USA, 2007

Keynote, "*Employing signal nonlinearity in machine learning and signal processing*", International Workshop on Machine Learning for Signal Processing (MLSP), Thessaloniki, Greece

Keynote, "*Novel directions in signal modality characterisation*", ISCA Workshop on Non-Linear Speech Processing, Paris, France

2006: **Featured Talk**, "*Distributed adaptive processing in complex systems"*, IEEE C&S Society, Chapter Japan

Featured Talk, "*Collaborative adaptive signal processing for wind modelling*", 21st Japanese Signal Processing Conference, Kyoto, Japan

Plenary, "*Towards multimodal computing: Extracting information from signal nonlinearity and determinism*", International Conference on Knowledge-Based, Intelligent Information and Engineering Systems (KES'06), Bournemouth UK

Keynote, "*Recurrent neural networks: Learning algorithms, architectures and stability*", Neural Networks Summer School, Porto, Portugal

2005: **Plenary**, "*Fixed Point theory framework for signal modality characterisation*", International Symposium on Complexity Modelling, Institute for Industrial Science, Tokyo, Japan

Tutorial, "*Machine learning applications of fixed point theory*", IEEE Workshop on Machine Learning for Signal Processing (MLSP), Mystic, USA

Featured Talk, "*Signal modality characterisation: Dealing with nonlinearity and uncertainty*", IEEE Signal Processing Society, Chapter Denmark, Aalborg Denmark

2003: **Plenary** (with A. Constantinides), "*On contours, corners & cats"*, EURASIP, Zagreb Croatia

Prizes and Awards

Editor's Choice Article, in recognition of the outstanding publication "Exploring convolutional neural network architectures for EEG feature extraction", by I. Rakhmatulin, M.-S. Dao, A. Nassibi, and D. P. Mandic, *Sensors*, vol. 24, no. 877, pp. 1–39, 2024. November 2024

Featured Article: H. J. Davies, G. Hammour, M. Zylinski, A. Nassibi, L. Stankovic, and D. P. Mandic, "The Deep-Match framework: R-peak detection in ear-ECG", *IEEE Transactions on Biomedical Engineering*, July 2024.

Editor's Choice Article, in recognition of the outstanding publication "An in-ear PPG-based blood glucose monitor: A proof-of-concept study", by G. Hammour and D. P. Mandic, *Sensors*, vol. 23, article 3319, pp. 1-14, 2023. July 2024

Winner: ICASSP 2024 "Auditory EEG Decoding Signal Processing Grand Challenge", M. Thornton, J. Auernheimer, C. Jehn, D. P. Mandic, and T. Reichenbach, *International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Seoul, South Korea, April 2024.

The Prize, in the 2023 IEEE Engineering in Medicine and Biology Society Prize Paper Award, for the article W. von Rosenberg, T. Chanwimalueang, V. Goverdovsky, D. Looney, D. Sharp, and D. P. Mandic, "Smart Helmet: Wearable Multichannel EEG and ECG", IEEE Journal of Translational Engineering in Health and Medicine, article id 700111, pp. 1-11, 2016.

Winner: ICASSP 2023 "Auditory EEG Decoding Signal Processing Grand Challenge", M. Thornton, D. P. Mandic, and T. Reichenbach, *International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Rhodes, Greece, June 2023.

Editor's Choice Article, in recognition of the outstanding publication "In-ear SpO_2: A Tool for Wearable, Unobtrusive Monitoring of Core Blood Oxygen Saturation", by H. J. Davies, I. Williams, N. S. Peters, and D. P. Mandic, *Sensors*, vol. 20, no. 17, 2020. March 2022

Outstanding Paper Award, at the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2021, for the article entitled "Nonstationary portfolios: Diversification in the spectral domain", by B. Scalzo Dees, A. Arroyo, L. Stankovic, A. G. Constantinides, and D. P. Mandic, *Proceedings of ICASSP'21*, pp. 5155–5159, 2021. There were 1734 articles presented at the conference and three outstanding papers were selected for this award 2021

Editors's choice article for October 2020: L. Stankovic, D. Mandic, M. Dakovic, B. Scalzo-Dees, M. Brajovic, E. Sejdic, and A. G. Constantinides, "Vertex-frequency graph signal processing: A comprehensive review", *Digital Signal Processing*, vol. 107, article 102802, 2020. 2020

Dennis Gabor Award, given by the International Neural Networks Society (INNS) for *Outstanding Achievements in Neural Engineering*, 2019

IEEE Signal Processing Magazine Best Paper Award, for A. Cichocki, D. P. Mandic, C. Caiafa, A.-H. Phan, G. Zhou, Q. Zhao and L. De Lathauwer, "Tensor decompositions for signal processing applications: From two-way to multiway component analysis", *IEEE Signal Processing Magazine*, vol. 32, no. 2, pp. 145–163, 2015. 2018

The paper T. Nakamura, V. Goverdovsky, M. Morrell, and D. P. Mandic, "Automatic sleep monitoring using ear-EEG", *IEEE Journal of Translational Engineering in Health and Medicine*, vol. 5, article id 2800108, pp. 1–8, 2017. **appeared in the IEEE EMBC Newsletter, June, 2017**

Commonwealth Scholarship Commission and Taylor & Francis highly commended article award, for M. U. Ahmed and D. P. Mandic, "A multivariate multiscale entropy algorithm with application to uterine EMG complexity analysis", *Entropy*, vol. 19, no. 1., pp. 1–18, 2017
http://cscuk.dfid.gov.uk/2017/09/erasmus-j-petrus-cilliers-wins-2017-best-journal-article-prize/

The paper **Smart helmet: Wearable multichannel ECG & EEG**, IEEE Journal of Translational Engineering in Health and Medicine, November 2016, was the top downloaded article through to September 2017, and also appeared as a highlight in the IEEE EMBC Newsletter, April 2017

Appeared in IEEE Spectrum Magazine with the ear-EEG system, July 2016

Honorary Member, the *Ararat International Academy of Sciences*, Paris, France 2015

Eric Laithwaite Best Research Poster Prize (with Dr V. Goverdovsky) for the *Multimodal Biosensing Electrode*, at the Electrical and Electronics Eng. Dept., Imperial College London 2014

President's Award for Excellence in Research Supervision, Imperial College London 2014

Shortlisted for the Annual Brain Computer Interface Research Award, among 169 entries 2013

Appeared in MIT Technology Review, article "Device could spot seizures by reading brainwaves through the ear", 2013

Selected for the IEEE Life Science Portal with the position paper on Ear-EEG 2012

Eric Laithwaite Best Research Poster Prize (with Dr D. Looney) for the *Ear-EEG concept*, at the Electrical and Electronics Engineering Department, Imperial College London 2012

Shortlisted for the Annual Brain Computer Interface Research Award, among 68 entries 2012

Certificate of Appreciation in *"Recognition of service as Associate Editor of IEEE Transactions on Signal Processing"*, presented by the IEEE Signal Processing Society 2010

Best Student Paper Award, International Neural Network Society for L. Li *et al.*, "Modelling of Brain Consciousness Based on Collaborative Adaptive Filters", in *ISNN'10* 2010

Diploma of Appreciation, for "*Contributions and service to the IEEE Transactions on Neural Networks*", presented by the IEEE Computational Intelligence Society 2009

Letter of Appreciation Award, for "*Special recognition of outstanding research achievements and contribution to increased public recognition of RIKEN*", RIKEN, Saitama, Japan 2009

Best Paper Award for T. Rutkowski, T. Tanaka, A. Cichocki, D. Erickson, and D. P. Mandic, "Interactive Component Extraction for Affective Brain Machine Interfaces", in *Proc. ICIC'09* 2009

Featured Article, W. Liu, D. Mandic, and A. Cichocki, "Blind Source Extraction Based on Linear Predictor", *IET Signal Processing*, vol. 1, no. 1, pp. 29–34, 2007 2007

Best Poster Award for M. Golz, D. Sommer, and D. P. Mandic, "Establishing Gold Standard for Microsleep Detection in Car Drivers", in *Proc. of Monitoring Sleep and Sleepiness (MSSP)* 2006

Best Student Paper Award for S. L. Goh *et al.*, "Complex Valued Estimation of Wind Profile and Wind Power", in *Proc. of IEEE MELECON-04* 2004

Best Student Paper Award, for K. Powels *et al.*, "Towards Mode Detection", in *RASC* 2002

Lord Hirst Award for postgraduate research, managed by the IEE 1997-1999

British Chevening Scholarship for a visiting academic position in the UK 1996-1997

Nikola Tesla Medal for inventory work in "Handy Braille" and "PC Brailler" 1995

Conference Organisation

2025: **Workshop Co-Chair**, "AI for Education", *IEEE International Joint Conference on Neural Networks (IJCNN'25)*, Rome, Italy, July 2025.

2024: **General Co-Chair**, *IEEE Workshop on Machine Learning for Signal Processing (MLSP'24)*, London, UK, September 2024.

General Co-Chair, IEEE International Conference on Mechatronics and Automation, Tianjin, China, August 2023.

Workshop Co-Organiser, "AI Innovations for Education: Transforming teaching and learning through cutting-edge technologies", IEEE World Congress on Computational Intelligence, WCCI'24, Yokohama, Japan, July 2024.

Special Session Co-Organiser, "Complex- and Hypercomplex-valued Neural Networks", IEEE World Congress on Computational Intelligence, WCCI'24, Yokohama, Japan, July 2024.

2023: **General Co-Chair, 24th International Conference on Digital Signal Processing**, Rhodes Island, Greece, June 2023.

General Co-Chair, IEEE International Conference on Mechatronics and Automation, Harbin, China, August 2023.

Special Session Organiser, "Complex valued and quaternionic neural networks: Theory and applications", *IEEE International Joint Conference on Neural Networks, IJCNN'23*, Gold Coast, Australia, July 2023.

2022: **Co-Organiser, IEEE-SPS/EURASIP Summer School on Data and Graph Driven Learning for Communications and Signal Processing**, Banja Luka, Bosnia and Herzegovina, September 2022.

Special Session Organiser, "Hypercomplex-valued neural networks: Theory and applications", *World Congress on Computational Intelligence*, Padova, Italy, July 2022.

2021: **General Chair**, *2021 International Symposium of Intelligent Unmanned Systems on Artificial Intelligence (SIUSAI 2021)*, Singapore, 19–21 April 2021

Honorary Chair, *"International Forum on Signal Processing (IFSP'21)"*, Sanya, China

2020: **Awards Committee**, "World Congress on Computational Intelligence (WCCI'20)", Glasgow, UK

Special Session Co-Organiser, *"Signal Processing Methods for Finance Applications"*, IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP'20, Barcelona, Spain

2019: **Technical Program Chair**, *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP'19)*, Brighton, UK

Education Panel Co-Organiser, *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP'19)*, Brighton, UK

Special Sessions Chair, *European Signal Processing Confeence (EUSIPCO'19)*, La Coruna, Spain

Special Sessions Chair, *IEEE International Joint Conference on Neural Networks, IJCNN'19*, Budapest, Hungary

2018: **Technical Program Co-Chair**, *IEEE International Digital Signal Processing Conference (DSP'18)*, Shanghai, China

Special Session Organiser, *Signal Processing Education: Challenges and Technology Driven Opportunities*, IEEE International Digital Signal Processing Conference (DSP'18), Shanghai, China

Special Session Organiser, *Complex-Valued and Quaternionic Neural Networks*, World Congress of Computational Intelligence (WCCI'28), Rio de Janeiro, Brazil

2017: **General Co-Chair**, *IEEE International Digital Signal Processing Conference (DSP'17)*, London, UK

European Liaison, *IEEE International Joint Conference on Neural Networks, IJCNN'17*, Anchorage, USA

Area Chair, *Signal Processing for Power Grids*, European Signal Processing Conference, EUSIPCO'17, Kos, Greece

2016: **Special Session Organiser**, *Making sense of multi-channel physiological data for pervasive health applications*, IEEE Workshop on Statistical Signal Processing, (SAM'16), Majorca, Spain
General Co-Chair, *IEEE International Digital Signal Processing Conference (DSP'16)*, Beijing, China

2015: **General Co-Chair**, IEEE International Digital Signal Processing Conference (DSP'15), Singapore
Publication Chair, *The First INNS Big Data Analytics Conference*, San Francisco, USA
International Advisory Committee, *International Conference and Workshop on Cloud Computing & Virtualization (ICWCCV'15)*, Mumbai, India

2014: **General Co-Chair**, *International Conference on Digital Signal Processing (DSP'14)*, Hong Kong
Member of the Steering Committee, *Third Conference on Innovations in Electronics and Communications Engineering*, Hyderabad, India
Publicity Chair, *World Congress on Computational Intelligence (WCCI)*, Beijing, China

2013: **Plenary Talks Chair**, *EUSIPCO'13*, Marrakech, Morroco
Special Session Organiser, *Complex Valued Neural Networks*, at the IEEE International Joint Conference on Neural Networks, (IJCNN'13)
General Chair, *First International Workshop on Assistive Computer Vision and Robotics*, in conjunction with the 17th International Conference on Image Analysis and Processing (ICIAP), Naples, Italy
Track Chair, Nonlinear Signal Processing, *EUSIPCO'13*, Marrakech, Morroco

2012: **Special Session Organiser**,*Cooperative Adaptive Estimation*, at the Asilomar Conference on Signals and Systems, Asilomar'12
Special Session Organiser, *Complex Valued Neural Networks*, at the IEEE International Joint Conference on Neural Networks, (IJCNN'12)
Workshop Organizer, *Activity Monitoring by Multi-Camera Surveillance Systems (AMMCSS)*, at the IEEE International Conference on Systems, Man, and Cybernetics (SMC'12)

2011: **Special Session Organiser**, *Machine Learning and Signal Processing for Smart Grid Applications*, at the IEEE International Joint Conference on Neural Networks, (IJCNN'11)
Special Session Organiser, *Complex Valued Neural Networks*, at the IEEE International Joint Conference on Neural Networks, (IJCNN'11)
Honorary Chair, *3rd IEEE International Conference on Signal Processing Systems*, (ICSPS'11)
European Liaison, *International Symposium on Neural Networks*, (ISNN'11)

2010: **Track Chair** for the *"Digital Signal Processing*" stream in the IEEE Asia Pacific Conference on Circuits and Systems (APCCAS'10)
Progamme Co-chair, IEEE International Conference on Signal Processing Systems (ICSPS'10)
Special Session Organiser, *"Machine Learning for Renewable Energy Applications"*, at the IEEE International Joint Conference on Neural Networks, (IJCNN'10)
Special Session Organiser, *"Computational Intelligence for Safe and Secure Environments and Transport"*, at the IEEE International Symposium on Industrial Electronics (ISIE'10)

2009: **Special Session Organiser**, *"Collaborative Signal Processing for Distributed Systems*" in the third ACM/IEEE Conference on Distributed Smart Cameras (ICDSC'09)
Track Chair for the *"Detection and Estimation*" stream in the IEEE Statistical Signal Processing
Area Chair for the *"Nonlinear Signal Processing*" area at EUSIPCO, Aalborg, Denmark

2008: **Special Session Organiser**, *"Multichannel Exploratory Data Analysis*" in the International Conference on Intelligent Computing (ICIC'08)
Track Co-Chair for the "*Networked Industrial Automation*" stream in the 4th IEEE Conference on Automation Science and Engineering (IEEE CASE 2008)

2007: **Mini-Symposium Organiser**, "*Advanced Signal Processing Techniques for Brain Data Analysis*" in the First International Conference on Cognitive Neurodynamics (ICCN'07)
Programme Co-Chair, International Conference on Artificial Neural Networks (ICANN'07)

2006: **Special Session Organiser**, "*Knowledge Extraction and Information Fusion*" in the Knowledge-Based, Intelligent Information and Engineering Systems Conference (KES'06)

2005: **Special Session Organiser**, "*Data Fusion for Industrial, Medical, and Environmental Applications*" in the International Conference on Artificial Neural Networks (ICANN'05)

2004: **Special Session Organiser**, "*Neural Networks for Blind Source Separation*" in the International Joint Conference on Neural Networks (IJCNN'04)

Publications

Books - authored:

[1] L. Stankovic, D. P. Mandic, M. Dakovic, M. Brakovic, B. Scalzo Dees, S. Li, and A. G. Constantinides, "Data Analytics on Graphs", *Now Publishers*, ISBN: 978-1-68083-982-1, 2021.

[2] A. Cichocki, A.-H. Phan, Q. Zhao, N. Lee, I. Oseledets, M. Sugiyama, and D. P. Mandic, "Tensor networks for dimensionality reduction and large-scale optimization. Part 2: Applications and future perspectives", *Now Publishers*, ISBN: 978-1-68083-276-1, 2017.

[3] A. Cichocki, N. Lee, I. Oseledets, A.-H. Phan, Q. Zhao, and D. P. Mandic, "Tensor networks for dimensionality reduction and large-scale optimization. Part 1: Low-rank tensor decompositions", *Now Publishers*, ISBN: 978-1-68083-222-8, 2016.

[4] D. P. Mandic and S. L. Goh, *Complex Valued Nonlinear Adaptive Filters: Noncircularity, Widely Linear and Neural Models*, research monograph, John Wiley & Sons, ISBN: 978-0-470-06635-5, 2009.

[5] D. P. Mandic and J. A. Chambers, *Recurrent Neural Networks for Prediction: Learning Algorithms, Architectures, and Stability*, research monograph, John Wiley & Sons, ISBN: 978-0-471-49517-8, 2001.

Books - edited:

[1] N. Kasabov *et al.*, (editors), *Springer Handbook of Bio- and Neuro-Informatics*, part-edited by D. Mandic, Springer 2014.

[2] D. P. Mandic, M. Golz, A. Kuh, D. Obradovic, and T. Tanaka, (editors), *Signal Processing Techniques for Knowledge Extraction and Information Fusion*, Springer 2008.

Edited conference proceedings:

[1] C. Jayne, D. P. Mandic, and R. Duro, "International Neural Network Society Workshop on Deep Learning Innovations and Applications", *Elsevier Procedia Computer Science*, 2023.

[2] D. P. Mandic (co-editor), "New Trends in Image Analysis and Processing", *Proceedings of ICIAP 2013 Workshops*, Lecture Notes in Computer Science, vol. 8158, Springer 2013.

[3] J. Marques de Sa, L. Alexandre, W. Duch, and D. P. Mandic, (editors), *Proceedings of the 17th International Conference on Artificial Neural Networks, ICANN'07. Part I and Part II*, Lecture Notes in Computer Science, LNCS 4668 and LNCS 4669, Springer 2007.

Journal articles:

[1] N. Ahsan, A. Sau, J. Barker, B. Neerahoo, N Qureshi, M. Koa-Wing, D. Keene, L. Malcolme-Lawes, D. Lefroy, N Linton, B. Lim, A. Varnava, Z. Whinnett, P. Kanagaratnam, D. P. Mandic, N. S. Peters, F. S. Ng, "Impact of pulmonary vein isolation on atrial fibrillation organisation: Correlation of intracardiac and surface Electrocardiogram measures", *Journal of Cardiovascular Electrophysiology*, accepted, July 2025.

[2] A. Jenkins, A. El-Medany, F. S. Ng, and D. P. Mandic, "Online graph topology learning via time-vertex adaptive filters: From theory to cardiac fibrillation", *IEEE Transactions on Signal and Information Processing over Networks*, vol. 11, pp. 965–979, 2025.

[3] M. Thornton, D. Mandic and T. Reichenbach, "Comparison of linear and nonlinear methods for decoding selective attention to speech from ear-EEG recordings,", *IEEE Access*, accepted, July 2025.

[4] H. Xiao, Y. L. Xu, A. Cukic, A. G. Constantinides, and D. P. Mandic, "Financial stress evaluation: A complexity science approach", *Financial Innovation*, accepted, April 2025.

[5] E. Menguc and D. P. Mandic, "Online censoring-based learning algorithms for fully complex-valued neural networks", *Neurocomputing*, vol. 623, pp. 1–12, 2025.

[6] S. Sun, D. Xu, Q. Diao, and D. P. Mandic, "Cramer-Rao lower bounds for unconstrained and constrained quaternion parameters", *IEE Transactions on Signal Processing*, accepted, January 2025.

[7] Q. Diao, D. Xu, S. Sun, and D. P. Mandic, "Optimizing beamforming in quaternion signal processing using projected gradient descent algorithm", Signal Processing, vol. 225. pp. 1–9, 2025.

[8] Y. Qiu, G. Zhou, C. Li, D. P. Mandic, and Q. Zhao, "Tensor ring rank determination using odd-dimensional unfolding method,", Neural Networks, vol. 183, pp. 1–14, 2025.

[9] M. Zhang, M. Xiang, Z. Zheng, S.P. Talebi, and D. P. Mandic, "A class of widely linear quaternion blind equalisation algorithms", Signal Processing, vol. 230, pp. 1–12, 2025.

[10] A. Sau, D. P. Mandic, F. S. Ng, *et al.*, "Prognostic significance and associations of neural network–derived electrocardiographic features", *Circulation: Cardiovascular Quality and Outcomes*, vol. 17, pp. 1–13, 2024.

[11] Y. Liang, D. Xu, N. Zhang, and D. P. Mandic, "Almost sure convergence of stochastic composite mirror descent for non-convex non-smooth optimisation", *Optimisation Letters*, vol. 18, pp. 2113–2131, 2024.

[12] A. Sau, E. Sieliwonczyk, K. Patlatzoglou, A. H. Ribeiro, K. A. McGurk, B. Zeidaabadi, H. Zhang, K. Macierzanka, D. P. Mandic, E. Sabino, L. Giatti, S. M. Barreto, L. do Valle Camelo, I. Tzoulaki, D. P. O'Regan, N. S. Peters, J. S. Ware, A. L. P. Ribeiro, D. B. Kramer, J. W. Waks, and F. S. Ng, "Artificial intelligence-enabled electrocardiogram for mortality and cardiovascular risk estimation: An actionable, explainable and biologically plausible platform" *Lancet Digital Health*, vol. 6, pp. 1–12, 2024.

[13] L. Pastika, A. Sau, K. Patlatzoglou, E. Sieliwonczyk, A. H. Ribeiro, K. A. McGurk, S. Khan, D. Mandic, W. R. Scott, J. S. Ware, N. S. Peters, Antonio L. P. Ribeiro, D. Kramer, J. W. Waks, and F. S. Ng,"Deep Neural Network-derived electrocardiographic body mass index as a predictor of cardiometabolic disease", *NPJ Digital Medicine*, vol. 7, article 147, pp. 1–16, 2024.

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[15] Y. Jiang, J. Liu, D. Xu, and D. P. Mandic, "UAdam: Unified Adam-type algorithmic framework for non-convex optimisation", *Neural Computation*, vol. 36, no. 9, pp. 1912–1938, 2024.

[16] D. Comminiello, E. Grassucci, D. P. Mandic, and A. Uncini, "Demystifying the hypercomplex: Inductive biases in hypercomplex deep learning", *IEEE Signal Processing Magazine*, vol. 41, no. 3, pp. 59–71 2024.

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[21] Q. Diao, D. Xu, S. Sun, and D. P. Mandic, "Price's theorem for quaternion variables", *IEEE Signal Processing Letters*, vol. 31, pp. 1424–1428, 2024.

[22] G. Hammour, H. Davies, G. Atzori, C. della Monica, K. K. G. Ravindran, V. Revell, D.-J. Dijk, and D. P. Mandic, "From scalp to in-ear EEG: A generalisable transfer learning model for automatic sleep scoring in older people", *IEEE Journal of Translational Engineering in Health & Medicine*, vol. 12, pp. 448-456, 2024.

[23] M. Zylinski, A. Nassibi, E. Occhipinti, A. Malik, M. Bermond, H. J. Davies, and D. P. Mandic, "Hearables: In-ear multimodal data fusion for robust heart rate estimation", *BioMedInformatics*, vol. 4, pp. 911-920, 2024.

[24] M. Thornton, D. P. Mandic and T. Reichenbach, "Decoding envelope and frequency-following EEG responses to continuous speech using deep neural networks", *IEEE Open Journal of Signal Processing*, vol. 5, pp. 700-716, 2024.

[25] S. Sun, Q. Diao, D. Xu, P. Bourigault, and D. P. Mandic, "Convex quaternion optimization for signal processing: Theory and applications", *IEEE Transactions on Signal Processing*, vol. 71, pp. 4106-4115, 2023.

[26] M. Zylinski, A. Nassibi, I. Rakhmatulin, A. Malik, C. Papavassiliou, and D. P. Mandic, "Deployment of artificial intelligence models on edge devices: A tutorial brief", *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 71, no. 3, pp. 1738–1743, 2024.

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[32] S. Poushpas, P. Normahani, I. Kisil, B. Szubert, D. P. Mandic, and U. Jaffer, "Tensor decomposition and machine learning for the detection of arteriovenous fistula stenosis: An initial evaluation", *PLOS ONE*, vol. 18, no. 7, pp. 1–15, 2023.

[33] S. Li and D. P. Mandic, "Von Mises-Fisher elliptical distribution", *IEEE Transactions on Neural Networks and Learning Systems*, vol. 34, no 12, pp. 11006–11012, 2023.

[34] H. J. Davies and D. P. Mandic, "Rapid extraction of respiratory waveforms from photoplethysmography: A deep corr-encoder approach", *Biomedical Signal Processing and Control*, vol. 85, pp. 1-8, 2023.

[35] P. H. Charlton, *et al.*, "The 2023 wearable photoplethysmography roadmap", *Physiological Measurement*, vol. 44, no. 11, pp. 1–90, 2023.

[36] Y. L. Xu, K. Konstantinidis and D. P. Mandic, "Graph-regularized tensor regression: A domain-aware framework for interpretable modelling of multi-way data on graphs", *Neural Computation*, vol. 35, pp. 1404–1429, 2023.

[37] G. Hammour and D. P. Mandic, "An in-ear PPG-based blood glucose monitor: A proof-of-concept study", *Sensors*, vol. 23, article 3319, pp. 1-14, 2023. (**Editors's choice article for July 2024**)

[38] E. C. Menguc, N. Nacir, and D. P. Mandic, "A class of online censoring based quaternion-valued Least Mean Square algorithms", *IEEE Signal Processing Letters*, vol. 30, pp. 244-248, 2023.

[39] A. Sau, S. Ibrahim, D. B. Kramer, J. W. Waks, N. Qureshi, M. Koa-Wing, D. Keene, MRCP, L. Malcolme-Lawes, D. C. Lefroy, N. W.F. Linton, P. Boon Lim, A. Varnava, Z. I. Whinnett, P. Kanagaratnam, MRCP, D. Mandic, N. S. Peters, MD, F. Siong Ng, "Artificial intelligence-enabled electrocardiogram to distinguish atrioventricular re-entrant tachycardia from atrioventricular nodal re-entrant tachycardia", *Cardiovascular Digital Health Journal*, vol. 4, no. 2, pp. 60–67, 2023.

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[46] K. Powezka, A. Pettipher, A. Hemakom, T. Adjei, P. Normahani, D.P. Mandic, and U. Jaffer "A pilot study of heart rate variability synchrony as a marker of intra-operative surgical teamwork and its correlation to the length of procedure", *Sensors*, vol. 22, pp. 1-11, 2022.

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[50] E. Menguc, M. Xiang, and D. P. Mandic, "Online censoring based complex–valued adaptive filters", *Signal Processing*, vol 200, article 108638, pp. 1–12, 2022.

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[52] J. Liu, D. Xu, H. Zhang, and D. P. Mandic, "On hyper–parameter selection for guaranteed convergence of RMSProp", *Cognitive Neurodynamics*, vol. 10, pp. 1-11, 2022.

[53] S. Ibrahim, A. Ahmed, B. Handa, D. B. Kramer, H. W. Waks, A. D. Arnold, J. P. Howard, N. Qureshi, M. Koa-Wing, D. Keene, L. Malcolme-Lawes, D. C. Lefroy, N. W. F. Linton, P. Boon Lim, A. Varnava, Z. I. Whinnett, P. Kanagaratnam, D. P. Mandic, N. S. Peters, and F. S. Ng, "Artificial intelligence-enabled electrocardiogram to distinguish cavotricuspid isthmus dependence from other atrial tachycardia mechanisms", *European Heart Journal*, vol. 3, pp. 405-414, 2022.

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