CURRICULUM VITAE

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PROF. ADÃO PAULO SOARES DA SILVA

1.1 Personal Data

Name: Adão Paulo Soares da Silva

Nationality Portuguese.

Work address: Campus Universitário de Santiago

Universidade de Aveiro / Instituto de Telecomunicações

3800 Aveiro, Portugal.

Email : asilva@av.it.pt or adaosilva@ua.pt

1 Education

2002/2007– PhD in Electrical Engineering, thesis title "Space-Frequency Precoding Techniques for MC-CDMA Systems", University of Aveiro, Portugal.

1999/2001– Master in Electronic and Telecommunications Engineering (2 years course), Dissertation Title "Interference Cancellation Techniques for UMTS-TDD System", University of Aveiro, Portugal.

1994/1999– BSc (five years course) in Electronic and Telecommunications Engineering, University of Aveiro, Portugal.

2 Professional Activities

2020 / current - Associate professor in the Department of Electronics, Telecommunications and Informatics at the University of Aveiro, Portugal.

2010 / 2020 – Assistant in the Department of Electronics, Telecommunications and Informatics at the University of Aveiro, Portugal.

2014 / currently – Senior Researcher in the Instituto de Telecomunicações, Wireless Communications Group, Aveiro, Portugal.

2007 / 2012 – Researcher in the Instituto de Telecomunicações, Wireless Communications Group, Aveiro, Portugal.

2007 / 2009 – Invited Assistant in the Department of Electronics, Telecommunications and Informatics at the University of Aveiro, Portugal.

3 Publications

Journals (Selected)

[1] P. Pedrosa, D. Castanheira, A. Silva, R. Dinis, A. Gameiro, "Efficient Joint Channel Equalization and Tracking for V2X Communications Using SC-FDE Schemes," *IEEE Access*, Vol. 8, No. 1, pp. 55158 - 55169, Dec. 2020.

[2] Q. Alsafasfeh, O. Saraereh. Ali, L. Al-Tarawneh, I. Khan, A. Silva, "Efficient Power Control Framework for Small-Cell Heterogeneous Networks", *Sensors*, vol. 20, No. 5, pp. 1 - 13, March, 2020.

[3] R. L. Magueta, D. Castanheira, P. Pedrosa, A. Silva, R. Dinis, A. Gameiro, "Iterative Analog-Digital Multi-User Equalizer for Wideband Millimeter Wave Massive MIMO Systems", *Sensors*, vol. 20, no. 2, Jan. 2020.

[4] S. Teodoro, A. Silva, R. Dinis, F. Barradas, P. M. Cabral, A. Gameiro, "Theoretical Analysis of Nonlinear Amplification Effects in Massive MIMO Systems", *IEEE Access*, vol. 7, pp. 172277 – 172289, Nov. 2019.

[5] D. Castanheira, G. Barb, A. Silva, A. Gameiro, "A multi-user linear equalizer for uplink broadband millimetre wave massive MIMO", *Digital Signal Processing: A Review Journal,* vol. 92, pp. 62 - 72, Setembro 2019.

[6] R. L. Magueta, D. Castanheira, A. Silva, R. Dinis, A. Gameiro, "Hybrid Multi-User Equalizer for Massive MIMO Millimeter-Wave Dynamic Subconnected Architecture", *IEEE Access*, vol. 7, pp. 79017- 79029, Junho 2019.

[7] S. Ali, D. Castanheira, A. Alsohaily, E. Sousa, A. Silva, A. Gameiro, "Joint Space-Frequency Block Codes and Signal Alignment for Heterogeneous Networks", *IEEE Access*, vol. 6, no. 2018, Nov. 2018.

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[9] G. Anjos, D. Castanheira, A. Silva, A. Gameiro, M. Gomes, J. P. Vilela, "Exploiting the Reciprocal Channel for Discrete Jamming to Secure Wireless Communications Against Multiple-Antenna Eavesdropper", *IEEE Access*, vol. 6, no. 2018, pp. 1 - 10, May, 2018.

[10] D. Castanheira, P. Lopes, A. Silva, A. Gameiro, "Hybrid Beamforming Designs for Massive MIMO Millimeter-Wave Heterogeneous Systems," *IEEE Access*, vol. 5, pp. 21806 - 21817, Nov. 2017.

[11] F. Ribeiro, J. Guerreiro, R. Dinis, F. Cercas, A. Silva, "Robust Receivers for Base Station Cooperation Systems," *Digital Signal Processing: A Review Journal*, Vol. 64, No. 1, pp. 8 - 16, May 2017.

[12] D. Castanheira, A. Silva, A. Gameiro, "Retrospective Interference Alignment: Degrees of Freedom Scaling with Distributed Transmitters," *IEEE Trans. on Information Theory*, Vol. 63, No. 3, pp. 1721-1730, March 2017.

[13] R. L. Magueta, D. Castanheira, A. Silva, R. Dinis, A. Gameiro, "Hybrid Iterative Space-Time Equalization for Multi-User mmW Massive MIMO Systems," *IEEE Transactions on Communications*, Vol. 65, No. 2, pp. 608 - 620, Feb. 2017.

[14] E. Castañeda, D. Castanheira, A. Silva, A. Gameiro, "Parametrization and Applications of Precoding Reuse and Downlink Interference Alignment," *IEEE Transactions on Wireless Communications*, Vol. 16, No. 1, pp. 1 - 10, Feb. 2017.

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[24] R. L. Magueta, S. Teodoro, D. Castanheira, A. Silva, R. Dinis, A. Gameiro, "Multiuser Equalizer for Hybrid Massive MIMO mmWave CE-OFDM Systems", *Applied Sciences*, MDPI, vol. 9, no. 16, pp. 3363 - 3363, Agosto 2019.

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[28] S. Ali, D. Castanheira, A. Silva, A. Gameiro, "Joint signal alignment precoding and physical network coding for heterogeneous networks," *Physical Communication, Elsevier*, Vol. 23, pp. 125 - 133, June 2017.

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Conference Proceedings

[1] S. Teodoro, A. Silva, R. Dinis, A. Gameiro, "Nonlinearities Impact on Massive MIMO Millimeter Wave Hybrid Systems", IEEE Vehicular Technology Conf. - VTC-Spring, Antuérpia, Bélgica, May 2020.

[2] P. Pedrosa, R. Dinis, D. Castanheira, A. Silva, A. Gameiro, "A State-space Approach for MIMO Channel Tracking in SC-FDE Transmissions", IEEE Vehicular Technology Conf. - VTC-Spring, Antuérpia, Bélgica, May 2020.

[3] P. Pedrosa, R. Dinis, D. Castanheira, A. Silva, A. Gameiro, "Joint Channel Equalization and Tracking for V2X Communications Using SC-FDE Schemes", IEEE Global Communications Conference - GLOBECOM, USA, Dez. 2019.

[4] P. Pedrosa, R. Dinis, D. Castanheira, A. Silva, A. Gameiro, "Joint Channel Equalization and Tracking for SC-FDE Schemes", IEEE Vehicular Technology Conference: VTC-Fall, USA, Set. 2019.

[5] G. Anjos, D. Castanheira, A. Silva, A. Gameiro, "Securing Non-Orthogonal Multiple Access Systems Against Simultaneous Eavesdropping Attacks Coming from Inside and Outside of the Network", IEEE PIMRC, Turkey, Istanbul, Sept. 2019.

[6] R. L. Magueta, R. Enes, S. Teodoro, A. Silva, D. Castanheira, R. Dinis, A. Gameiro, "Hybrid Nonlinear Multiuser Equalizer for mmWave Massive MIMO CE-OFDM Systems", IEEE PIMRC, Turkey, Istanbul, Sept. 2019.

[7] P. Pedrosa, R. Dinis, D. Castanheira, A. Silva, A. Gameiro, "Joint Channel Equalization and Tracking for SC-FDE Schemes", Vehicular Technology Conference (VTC) -Fall, Honolulu, Hawaii, United States, Sept., 2019.

[8] S. Teodoro, A. Silva, R. Dinis, A. Gameiro, "Performance Impact of Nonlinear Amplification in Massive MIMO mmWave Systems", IEEE Vehicular Technology Conf. - VTC-Spring, Kuala Lumpur, Malaysia, May 2019.

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[81] A. Silva and A. Gameiro, "Space-Frequency Pre-Filtering Technique for Downlink TDD MC-CDMA Systems", in proc. *of IEEE VTC Fall*, October, 2003.

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[85] A. Morgado, L.G. Gonçalves, A. Silva; Gameiro, A.; "Implementation of a Simulation Module for SISO Broadband Propagation Channel Model", in proc. *Conf. on Telecommunications - ConfTele*, Aveiro, Portugal, April, 2003.

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4 Projects

Project Coordination

2018 – 2021, Multi-band Access Strategies for 5G Cooperative Networks (MASSIVE5G).
Funding : 235K euros .

2018 – 2021 , Power-Efficient Solutions for Secure wireless Sensor Networks (PES3N)
Funding : 239K euros .

2017 – 2019 , Securing Wireless Networks with Coding and Jamming (SWING2).
Funding : 179K euros .

2016 – 2018, Cooperative Multi-band Access Strategies for 5G Ultra Dense Networks (PURE-5GNET).
Funding : 150K euros

2016 – 2018 , Advanced PHY/MAC design for Very Low Latency Network-assisted Machine Type Communications (VELOCE-MTC).
Funding : 140K euros

2013 – 2015 , Coordinated MultiPoint Strategies for Future Wireless Networks (COPWIN)
Funding : 120K euros.

2010 – 2012 , Cooperative and Antenna Diversity for Broadband Wireless Networks (CADWIN)
Funding : 120K euros.

2014 – 2016 (Jun., Joint Cooperative and Cognitive Strategies for Heterogeneous Wireless Systems (HETCOP)
Funding : 36K euros.

2011 – 2013 , Multicell Cooperation for Future Wireless Systems (CELCOP)
Funding : 40K euros.

Participation in European Projects

2019 –2022, New RAN TEchniques for 5G UltrA-dense Mobile networks (TeamUp5G). Ref. EU/H2020-MSCA-ITN-ETN 813391. Funding : 3,72M euros.

2008/2010 – Enhanced Wireless Communication Systems Employing Cooperative Diversity (CODIV). Ref. FP7 ICT-2007-215477. Funding:: 9,7M euros.

2008/2010 – Fibre Optic Networks for Distributed, Extendible Heterogeneous Radio Architectures and Service Provisioning (FUTON). Ref. FP7 ICT-2007-215533. Funding::: 1,3M euros.

2005-2007 – Wireless Systems providing high Quality Services (WISQUAS), CELTIC Project CP2-035.

2004-2006 – MC-CDMA Multiple Antenna System on Chip for Radio Enhancements (4MORE), Financiado pela Comissão Europeia, IST 6th framework project 507039.

5. Student Supervision

Post-doc supervision

2018 – 2021, Pedro Pedrosa, "Channel estimation and tracking for massive MIMO millimeter wave communications". University of Aveiro/Instituto de Telecomunicações.

2018 - Syed Ali, "Interference Mitigation Techniques for mmW massive MIMO Heterogeneous Systems", University of Aveiro/Instituto de Telecomunicações.

2012-2018- Sara Teodoro, "Interference Mitigation Techniques for Macrocell and Femtocell Co-existence", University of Aveiro/Instituto de Telecomunicações.

2014-2016 – Eduardo Castañeda, "Cross-Layer Techniques for MIMO systems", University of Aveiro/Instituto de Telecomunicações.

2014-2015 - Carlos Ribeiro, "Implementation of Interference Alignment Algorithms in FPGAs", University of Aveiro/Instituto de Telecomunicações..

2013-2016 - Daniel Castanheira, "Cooperative and Cognitive Techniques for Future Wireless Hierarchical Cellular Systems", University of Aveiro/Instituto de Telecomunicações.

PhD supervision

Joumana Kassam, "Cell-free massive MIMO techniques for future wireless systems", PhD in Electrical Engineering, DETI, University of Aveiro 2020 (Jan.)-2024.

Rafael Santos, "Ultra Reliable and Low Latency Communications Techniques for Future Wireless Systems" PhD in Telecommunications, MAP-TELE Programme (Universities of Aveiro, Porto e Minho), 2019 (Sep.)-2023.

Leonardo Lamas, "Waveforms and Separation Algorithms for Joint use in Radar and Communications", PhD in Electrical Engineering, DETI, University of Aveiro 2019(Sep.)-2023.

Gustavo Anjos, "Physical Layer Security for Wireless Networks with Help of Jamming", PhD in Electrical Engineering, DETI, University of Aveiro, 2016-2020 (Finished).

Roberto Magueta, "Transmitter and Receiver Designs for Future mmW and massive MIMO based Wireless Systems", PhD in Electrical Engineering, DETI, University of Aveiro, 2014-2019 (Finished).

Syed Ali, "Physical-Layer Cooperative Interference Mitigation Techniques for Wireless Heterogeneous Systems", PhD in Telecommunications, MAP-TELE Programme, 2013-2018 (Finished).

Reza Holakouei, "Precoding Techniques for Coordinated Multicell Systems", PhD in Telecommunications, MAP-TELE Programme, 2009-2013 (Finished).

Darlene Neves, "Channel Estimation and Parameters Acquisition System Employing Cooperative Diversity", PhD in Telecommunications, MAP-TELE Programme, 2009-2013 (Finished).

Sara Teodoro, "Distributed Coding for Systems with Cooperative Diversity", PhD in Electrical Engineering a, DETI, University of Aveiro, 2007-2011 (Finished)

6 Conference Organization

2019/2020 (Jul.), IEEE/IET International Symposium on Communications Systems, Networks and Digital Signal Processing (CSNDSP), Porto. Organizing Committee/TPC Chair.

2019/2020 (Jul.), Special Session Chair. Special Session with title "Massive MIMO and millimeter Wave Communications", in CSNDSP.

2018, IEEE Vehicular Technology Conference (VTC-Spring) 2018, Porto, TVT Program Co-chair.

7 Editorial committees

2019-2022, IEEE Access, Associate Editor.

2019-2021, IET Signal Processing, Editorial Board Member.

2020-2022, Electronics, Editorial Board Member (Topic Editor: Microwave and Wireless Communications).

2020 - Electronics, Special Issue Guest Editor "Cooperative Communications for Future Wireless Systems".

2015-2018 - Radioengineering Journal, Editorial Board Member.

8 TPC member

IEEE Global Communications Conference (GLOBECOM), 2018, 2019, 2020.

IEEE Wireless Communications and Networking Conference (WCNC), 2012, 2014, 2015, 2016, 2017, 2018, 2019, 2020.

IEEE International Conference on Communications (ICC), 2015, 2018, 2019, 2020.

IEEE International Symp. on Personal, Indoor and Mobile Radio Communications (PIMRC), 2009, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020.

IEEE Vehicular Technology Conference (VTC-Fall), 2017, 2018, 2019, 2020.

IEEE Vehicular Technology Conference (VTC-Spring), 2009, 2010, 2011, 2018, 2019,2020.

Internacional Synposium on Wireless Personal Multimedia Communications (WPMC), 2017, 2018, 2019, 2020.

IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom), 2015, 2016, 2017, 2018, 2019, 2020.

Eurppean Signal Processing Conference (EUSIPCO), 2014, 2015, 2016, 2017, 2019, 2020.

European Conference on Networks and Communications (EUCNC), 2020.

IEEE International Symposium on Computer and Communications (ISCC), 2017, 2018, 2019, 2020.

IEEE International Conference on Communications, Network, and Satellite (Comnetsat), 2018, 2019.

IEEE International Conf. on Wireless Communications and Signal Processing (WCSP), 2017, 2018, 2019, 2020.

International Symposium on Signal Processing and Intelligent Recognition Systems (SIRS), 2018, 2019,2020.

IEEE International Conference on Knowledge and Systems Engineering (KSE), 2019, 2020.

IEEE Middle East & North Africa COMMunications Conference (MENACOMM), 2019, 2020.

IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS), 2016, 2017, 2018, 2019, 2020.

International Conference on Recent Advances in Signal Processing, Telecommunications & Computing (SigTelCom), 2017, 2018, 2019, 2020.

ACM and IEEE International Conference on Connected Vehicles & Expo(ICCVE), 2012, 2014,2015,2016, 2017.

IEEE Industrial Electronics and Applications Conference (IEACon), 2016, 2017, 2018.

International Conf. on Systems and Networks Communications (ICNS), 2009-2017.

International Conf. on Wireless and Mobile Communications (ICWMC), 2009-2017.

IEEE Symposium on Computer Applications and Industrial Electronics (ISCAIE), 2014

IEEE Symposium on Wireless Technology & Applications (ISWTA), 2014.

International Conference on Telecomunications (ICT), 2009, 2014.

9 Reviewer Activities

International Journals: IEEE Transaction on Communications, Transactions on Vehicular Technology, IEEE Access, IEEE Communications Letters, IEEE Wireless Communications Letters, IEEE Communications Magazine, IEEE Transactions on Microwave Theory and Techniques, Electronics, Applied Sciences, Sensors, Entropy, EURASIP Journal on Wireless Communications and Networking, Radioengineering, Physical Communications, Digital Signal Processing, IET communications, Wireless Networks Journal, International Journal on Advances in Telecommunications, International Journal on Advances in Networks and Services, etc.

International Conferences: IEEE VTC-Spring/Fall, IEEE ICC, IEEE PIMRC, IEEE WCNC, EUSIPCO, IEEE ISCC, IEEE GLOBECOM, WPMC, ITC, ICNS, ICWMC, ICCVE, etc.

2018- "The Best Reviewer Award" assigned by the Radioengineering journal "to thank reviewers providing high-quality reviews".