Nuno Manuel Branco Souto

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Contacts

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Research Interests

- Signal processing for communications
- Communication signal transmission, reception and detection algorithms; channel estimation and modeling
- MIMO communications
- Performance analysis of communication systems
- Optimization Techniques in Wireless Communications
- Wireless, ad hoc and sensor networks

Academic Qualifications

University/Institution	Type	Degree	Period
ISCTE-Instituto Universitario de Lisboa	Aggregation	Ciências e Tecnologias da Informação	2021
Instituto Superior Técnico - UTL	PhD	Engenharia Electrotécnica e de Computadores	2006
Instituto Superior Técnico - UTL	Licenciate	Engenharia Aeroespacial	2000

Teaching Activities

Teaching Year	Sem.	Course Name	Degree(s)	Coord.
2025/2026	2º	Embedded Systems	Master Degree in Telecommunications and Computer Engineering;	Yes
2025/2026	1º	Master Dissertation in Telecommunications and Computer Engineering		No
2025/2026	1º	Master Dissertation in Computer Science Engineering		Yes
2025/2026	1º	Circuit Theory	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2024/2025	2º	Embedded Systems	Master Degree in Telecommunications and Computer Engineering;	Yes
2024/2025	1º	Master Dissertation in Telecommunications and Computer Engineering		Yes
2024/2025	1º	Master Dissertation in Computer Science Engineering		No
2024/2025	1º	Circuit Theory	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2024/2025	1º	Master Dissertation in Telecommunications and Computer Engineering		Yes
2023/2024	2º	Embedded Systems	Master Degree in Telecommunications and Computer Engineering;	Yes
2023/2024	1º	Master Dissertation in Telecommunications and Computer Engineering		Yes

2023/2024	1º	Master Dissertation in Computer Science Engineering		No
2023/2024	1º	Circuit Theory	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2022/2023	2º	Master Project in Telecommunications and Computer Engineering		Yes
2022/2023	2º	Embedded Systems	Master Degree in Telecommunications and Computer Engineering;	Yes
2022/2023	2º	Master Dissertation in Telecommunications and Computer Engineering		Yes
2022/2023	2º	Master Dissertation in Computer Science Engineering		No
2022/2023	2º	Master Dissertation in Telecommunications and Computer Engineering		Yes
2022/2023	1º	Master Project in Telecommunications and Computer Engineering		Yes
2022/2023	1º	Master Dissertation in Telecommunications and Computer Engineering		Yes
2022/2023	1º	Master Dissertation in Computer Science Engineering		No
2022/2023	1º	Circuit Theory	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2022/2023	1º	Master Dissertation in Telecommunications and Computer Engineering		Yes
2021/2022	2º	Embedded Systems	Master Degree in Telecommunications and Computer Engineering;	Yes
2021/2022	2º	Master Dissertation in Telecommunications and Computer Engineering		Yes
2021/2022	2º	Master Dissertation in Telecommunications and Computer Engineering		Yes

2021/2022	1º	Master Dissertation in Telecommunications and Computer Engineering		Yes
2021/2022	1º	Circuit Theory	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2021/2022	1º	Master Dissertation in Telecommunications and Computer Engineering		Yes
2020/2021	2º	Master Project in Telecommunications and Computer Engineering		Yes
2020/2021	2º	Embedded Systems	Master Degree in Telecommunications and Computer Engineering;	Yes
2020/2021	2º	Master Dissertation in Telecommunications and Computer Engineering		Yes
2020/2021	1º	Multimedia Communication Systems		Yes
2020/2021	1º	Circuit Theory	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2020/2021	1º	Master Dissertation in Telecommunications and Computer Engineering		Yes
2019/2020	2º	Embedded Systems	Master Degree in Telecommunications and Computer Engineering;	Yes
2019/2020	2º	Advanced Topics in Digital Communications		Yes
2019/2020	1º	Circuit Theory	Bachelor Degree in Telecommunications and Computer Engineering;	Yes

Supervisions

- **Ph.D. Thesis**

- Ongoing

	Student Name	Title/Topic	Language	Status	Institution
1	Omid Abbassi Aghda	System Design in OTFS Modulation – Data detection and Fractional Channel Estimation	English	Developing	--

2	Pedro Ricardo Freitas Coelho	Applied Machine Learning Techniques for 6G Systems	English	Developing	Iscte
3	João Filipe de Quadros Gaspar	A new way to protect areas of unauthorized drones trough communications spoofing and beamforming	English	Developing	Iscte
4	Sofia Alexandra Duarte de Figueiredo	Design and Evaluation of Molecular Communication Systems for the Internet of Bio-Nano Things	English	Developing	Iscte
5	Diogo Roque Mendes	Design and Development of RIS-aided XL-MIMO Transmission and Reception Schemes	English	Developing	Iscte

- Concluded

	Student Name	Title/Topic	Language	Institution	Concluding Year
1	Vasco Rafael Jerónimo Velez	Design and Integration of novel transmission techniques for coverage, power consumption and data improvements in wireless communication networks	English	Iscte	2024
2	Renato Branco Ferreira	Anti-UAV mobile system with jamming and spoofing capabilities to intercepting and controlling target-drones	Portuguese	Iscte	2023
3	Renato Branco Almeida Ferreira	Anti-UAV mobile system with jamming and spoofing capabilities to intercepting and controlling target-drones	English	Iscte	2023
4	João Pedro Calado Barradas Branco Pavia	Design of Terahertz Transceiver Schemes for Ultrahigh-Speed Wireless Communications	English	Iscte	2022
5	João Pedro Calado Barradas Branco Pavia	Design of Terahertz Transceiver Schemes for Ultrahigh-Speed Wireless Communications	English	Iscte	2022
6	Luís Carlos Barruncho dos Santos Gonçalves	Improved Planning and Resource Management in Next Generation Green Mobile Communication Networks	English	Iscte	2020

• M.Sc. Dissertations

- Ongoing

	Student Name	Title/Topic	Language	Status	Institution
1	Tiago Ramos Faria	Automatic Parameter Otimization	--	Developing	Iscte

2	Rafael Alexandre Abundância Rocha	Design and implementation of a transceiver using TCH Codes	--	Developing	Iscte
3	Ricardo Miguel Farinha Gouveia	Utilização de Redes Neuronais para seleção de Beams em redes 5G/6G	--	Developing	Iscte
4	Ricardo Filipe Duarte Ribeiro	UAV Detection from Acoustic Signals Using Deep Learning Techniques	--	Developing	Iscte
5	Pedro Alexandre Esteves Duarte	RF-based UAV Detection using a Deep Learning Approach	--	Developing	Iscte
6	Joana Rita Gomes Antunes	Avaliação a nível de sistema de comunicações MIMO auxiliadas por RIS de baixa resolução em futuras redes 6G	--	Developing	Iscte
7	Ricardo André da Cunha Abrantes	Design and Implementation of an Automated Parking Assistance System supported by SDN and IoT-enabled sensors	--	Developing	Iscte
8	Afonso Gonçalo de Moura Rolo Leal Gonçalves	SDN and SDR Integration for Next-Generation Mobile Networks	--	Developing	Iscte

- Concluded

	Student Name	Title/Topic	Language	Institution	Concluding Year
1	Miguel Alexandre Moreira Romana	RF-Based Drone Detection using Deep Learning approaches	English	Iscte	2025
2	Tiago Francisco da Costa Soeira	Smart Spectrum Analyzer for UAV link detection using Software Defined Radios	Portuguese	Iscte	2024
3	Filipe Alexandre Sequeira Gonçalves	Signal power directivity analyzer for UAV links using Software Defined Radios	English	Iscte	2024
4	Duarte Miguel Leite Casaleiro	Molecular Communication Schemes for Extreme Environments in Future Wireless Networks	English	Iscte	2024
5	Ricardo Alexandre Cajado Gaspar	Use of neural networks for channel estimation in future 6G networks	Portuguese	Iscte	2023
6	Ricardo Alexandre Cajado Gaspar	Use of neural networks for channel estimation in future 6G networks	Portuguese	Iscte	2023
7	Ana Rita Betencourt da Costa Rodrigues dos Santos	Reconfigurable Intelligent Surfaces based System Design for Future 6G Wireless Networks	English	Iscte	2022

8	Décio Manuel Brito Tavares	System Level Simulation of Reconfigurable Intelligent Surfaces scenarios	Portuguese	Iscte	2022
9	Rui Tiago Ferro Henrique	Direct Digital Synthesis	Portuguese	Iscte	2022
10	João Miguel Rocha Praia	An Environment-aware Communications System design for the THz band	Portuguese	Iscte	2021
11	Sofia Alexandra Duarte de Figueiredo	Molecular Communications techniques for the Internet of Bio-Nano Things	English	Iscte	2021
12	Carolina Loureiro Gonçalves	System Level Simulation of 5G using Millimeter Waves	Portuguese	Iscte	2021
13	Catarina Sá Rita	System Level Simulation of Spatial Modulation based Non Orthogonal Multiple Access Schemes	Portuguese	Iscte	2021
14	Karla Valentina de Freitas Lara	Jammers for Mobile Cellular Systems applied to unauthorized UAVs	English	Iscte	2020
15	Filipe Manuel Nogueira Afonso	System to Monitor Pets Remotely.	Portuguese	Iscte	2020
16	Bernardo Brogueira Farto	Design of Precoders and Combiners for Multiuser Communications Assisted by Index Modulations in Post 5G Systems	Portuguese	Iscte	2020
17	Gonçalo Alexandre Rodrigues Simões	Smart System for Control and Monitoring of Swimming Pools	English	Iscte	2019
18	Carolina Aparício Dionísio	Distributed sensing solution for home efficiency tracking	English	Iscte	2019
19	Diogo Dias dos Santos	Wireless UAV Restraining System	English	Iscte	2019
20	Sara Cristina Martins Ferreira	Real time Portuguese Sign Language Translation System	Portuguese	Iscte	2019
21	João Filipe de Quadros Gaspar	UAVS Capture Through GPS Signal Spoofing	Portuguese	Iscte	2018
22	João Pedro Calado Barradas Branco Pavia	Development of new technologies for the THz domain with applications on structural health monitoring	English	Iscte	2018
23	António José Borges de Brito	Jamming for unauthorised UAV operations- Communications link	Portuguese	Iscte	2018
24	Pedro Miguel Carvalho Cristóvão	Low Complexity Receivers for Single Carrier Large-Scale Spatial Modulations Systems	Portuguese	Iscte	2018
25	Vasco Rafael Jerónimo Velez	Implementation of Unauthorized Zones for UAVs using GPS spoofing	Portuguese	Iscte	2018
26	Renato Branco Almeida Ferreira	GPS Jamming Techniques for UAVs	Portuguese	Iscte	2018

27	Tiago Miguel Simão Caria	Design and Implementation of Reliable Unnamed Aerial System Design	English	Iscte	2017
28	Diogo Rafael Baptista Peres	Generalized software application for operation of a 3D vehicle in air, water and land.	English	Iscte	2017
29	André Filipe Xavier da Glória	The use of Sensor Networks to create smart environments	English	Iscte	2017
30	Bruno Assunção Ricardo	Mecanismos de segurança para operação fiável para veículos 3D	Portuguese	Iscte	2017
31	Filipe Miguel Ferreira Cardiga	Reliable Communication System for 3D Vehicles using Heterogeneous Networks	English	Iscte	2016
32	Hugo André Pontes Lopes	Spatial Modulations for Green Heterogeneous Networks	Portuguese	Iscte	2016
33	Nuno Miguel Amorim dos Santos	Software platform to control squads of unmanned vehicles in real-time	English	Iscte	2016
34	António Sérgio Lima Raimundo	Autonomous Obstacle Collision Avoidance System for UAVs in Rescue Operations	English	Iscte	2016
35	David Martins Simões	Emissor/Recetor Acústico definido por Software para comunicações subaquáticas	Portuguese	Iscte	2016
36	Tiago Martins Saraiva	Reliable Air-to-Ground Communication for Low Altitude Unnamed Aerial Vehicles	English	Iscte	2015
37	Tiago Francisco Domingues Antunes	Método de Partição Espectral Gaussiano em Linhas de Transmissão com Perdas e com Condições Fronteira usando o Método de Monte Carlo	Portuguese	Iscte	2015
38	Luís Miguel Moreira Afonso	Monitoring and control of an UAV	English	Iscte	2014
39	João Pedro Horta Simões	Design and Implementation of an Energy Efficient Wireless Sensor and Actor Network for Building/Home Automation	English	Iscte	2013
40	Carlos Diogo Baptista Duque	A Human Computer Interface System Based on Electrooculography Events for Real Time Interaction	English	Iscte	2012
41	João André Correia Batista Conduto	--	--	Iscte	2011

Total Citations

Web of Science®	730

Scopus	1141

Publications

• Scientific Journals

- Scientific journal paper

1	Mendes, D., Souto, N., Pavia, J. P. & Silva, J. (2026). Optimizing the achievable sum-rate in OFDM-based Multi-User MIMO systems assisted by multiple Beyond-Diagonal RISs. IEEE Open Journal of the Communications Society. 7, 1843-1860
2	Mendes, D., Pavia, J. P., Souto, N., Silva, J. & Correia, A. (2026). Beamforming optimization and system level assessment in RIS-aided MIMO systems comprising hybrid precoding architectures. IEEE Access. 14, 29333-29348
3	Casaleiro, D., Souto, N. M. B. & Silva, J. C. (2024). Synchronization and detection in molecular communication using a deep-learning-based approach. IEEE Access. 12, 192539-192553 - Times Cited Google Scholar: 2
4	Pavia, J. P., Velez, V., Souto, N., Silva, M. M. Da & Correia, A. (2024). System-level assessment of massive multiple-input–multiple-output and reconfigurable intelligent surfaces in centralized radio access network and IoT scenarios in sub-6 GHz, mm-Wave, and THz bands. Applied Sciences. 14 (3) - Times Cited Web of Science®: 9 - Times Cited Scopus: 9
5	Souto, N. & Silva, J. (2023). Joint beamforming algorithm for multi-stream MIMO systems assisted by multiple reconfigurable intelligent surfaces. IEEE Open Journal of the Communications Society. 4, 1317-1333 - Times Cited Web of Science®: 11 - Times Cited Scopus: 12 - Times Cited Google Scholar: 14
6	Souto, N. (2023). Joint active and passive beamforming for RIS-aided MIMO communications with low-resolution phase shifts. IEEE Communications Letters. 27 (6), 1604-1608 - Times Cited Web of Science®: 11 - Times Cited Scopus: 12 - Times Cited Google Scholar: 16
7	Velez, V., Pavia, J. P., Souto, N., Sebastião, P. & Correia, A. (2023). Performance assessment of a RIS-empowered post-5G/6G network operating at the mmWave/THz bands. IEEE Access. 11, 49625-49638 - Times Cited Web of Science®: 10 - Times Cited Scopus: 11 - Times Cited Google Scholar: 12
8	Pavia, J. P., Velez, V., Souto, N., Ribeiro, M., Sebastião, P. & Correia, A. (2022). System-level assessment of low complexity hybrid precoding designs for massive MIMO downlink transmissions in beyond 5G networks. Applied Sciences. 12 (6) - Times Cited Web of Science®: 3 - Times Cited Scopus: 3 - Times Cited Google Scholar: 7

9	Branco Ferreira, R., Gaspar, J., Sebastião, P. & Souto, N. (2022). A software defined radio based anti-UAV mobile system with jamming and spoofing capabilities. Sensors. 22 (4) - Times Cited Web of Science®: 35 - Times Cited Scopus: 45 - Times Cited Google Scholar: 65
10	Praia, J., Pavia, J. P., Souto, N. & Ribeiro, M. (2022). Phase shift optimization algorithm for achievable rate maximization in reconfigurable intelligent surface-assisted THz communications. Electronics. 11 (1), 18 - Times Cited Web of Science®: 13 - Times Cited Scopus: 13 - Times Cited Google Scholar: 22
11	Velez, V., Pavia, J. P., Rita, C., Gonçalves, C., Souto, N., Sebastião, P....Correia, A. (2022). System-level assessment of a C-RAN based on generalized space–frequency index modulation for 5G new radio and beyond. Applied Sciences. 12 (3) - Times Cited Web of Science®: 5 - Times Cited Scopus: 5 - Times Cited Google Scholar: 9
12	Figueiredo, S., Souto, N. & Cercas, F. (2022). Low-complexity channel codes for reliable molecular communication via diffusion. Sensors. 22 (1) - Times Cited Web of Science®: 3 - Times Cited Scopus: 5 - Times Cited Google Scholar: 11
13	Pavia, J. P., Velez, V., Branco Ferreira, R., Souto, N., Ribeiro, M., Silva, J....Dinis, R. (2021). Low complexity hybrid precoding designs for multiuser mmWave/THz ultra massive MIMO Systems. Sensors. 21 (18) - Times Cited Web of Science®: 16 - Times Cited Scopus: 17 - Times Cited Google Scholar: 20
14	Velez, V., Pavia, J.P., Souto, N., Sebastião, P. & Correia, A. (2021). A generalized space-frequency index modulation scheme for downlink MIMO transmissions with improved diversity. IEEE Access. 9, 118996-119009 - Times Cited Web of Science®: 7 - Times Cited Scopus: 6 - Times Cited Google Scholar: 17
15	Silva, J., Souto, N. & Pereira, J. (2021). Closed form solution for the valuation of deferred tax assets. Journal of Accounting and Taxation. 13 (1), 1-15 - Times Cited Web of Science®: 1 - Times Cited Google Scholar: 5
16	Pavia, J. P., Velez, V., Brogueira, B., Souto, N. & Correia, A. (2020). Precoded generalized spatial modulation for downlink MIMO transmissions in beyond 5G networks. Applied Sciences. 10 (18) - Times Cited Web of Science®: 4 - Times Cited Scopus: 3 - Times Cited Google Scholar: 5
17	Gaspar, J., Branco Ferreira, R., Sebastião, P. & Souto, N. (2020). Capture of UAVs through GPS spoofing using low-cost SDR platforms. Wireless Personal Communications. 15 (4), 2729-2754 - Times Cited Web of Science®: 39 - Times Cited Scopus: 41 - Times Cited Google Scholar: 56

18	Pavia, J. P., Souto, N. & Ribeiro, M. (2020). Design of a reconfigurable THz filter based on metamaterial wire resonators with applications on sensor devices. Photonics. 7 (3), 1-21 - Times Cited Web of Science®: 6 - Times Cited Scopus: 5 - Times Cited Google Scholar: 7
19	Branco Ferreira, R., Gaspar, J., Sebastião, P. & Souto, N. (2020). Effective GPS jamming techniques for UAVs using low-cost SDR platforms. Wireless Personal Communications. 115 (4), 2705-2727 - Times Cited Web of Science®: 36 - Times Cited Scopus: 47 - Times Cited Google Scholar: 89
20	Silva, J., Ponte, J., Lopes, J. P. & Souto, N. (2020). Flow management with differentiated classes of service and quality of experience. Journal of Computer Networks and Communications. 2020, 1-8
21	Souto, N. & Correia, A. (2020). A precoding aided space domain index modulation scheme for downlink multiuser MIMO systems. IEEE Transactions on Vehicular Technology. 69 (10), 12333-12337 - Times Cited Web of Science®: 4 - Times Cited Scopus: 4 - Times Cited Google Scholar: 5
22	Souto, N. & Correia, A. (2020). Frequency domain equalization for single and multiuser generalized spatial modulation systems in time dispersive channels. IEEE Wireless Communications Letters. 9 (3), 316-320 - Times Cited Web of Science®: 7 - Times Cited Scopus: 6 - Times Cited Google Scholar: 7
23	Gonçalves, L., Sebastião, P., Souto, N. & Correia, A. (2020). One step greener: reducing 5G and beyond networks' carbon footprint by 2-tiering energy efficiency with CO2 offsetting. Electronics. 9 (3), 464 - Times Cited Web of Science®: 9 - Times Cited Scopus: 11 - Times Cited Google Scholar: 23
24	Correia, A., Souto, N., Sebastião, P., Gomez-Barquero, D. & Fuentes, M. (2020). Broadcasting scalable video with generalized spatial modulation in cellular networks. IEEE Access. 8, 22136-22144 - Times Cited Web of Science®: 4 - Times Cited Scopus: 3 - Times Cited Google Scholar: 6
25	Souto, N., Silva, J., Pavia, J. P. & Ribeiro, M. (2019). An alternating direction algorithm for hybrid precoding and combining in millimeter wave MIMO systems. Physical Communication. 34, 165-173 - Times Cited Web of Science®: 19 - Times Cited Scopus: 19 - Times Cited Google Scholar: 21
26	Silva, J., Souto, N. & Pereira, J. (2019). Valuation of compounded deferred tax assets for the banking sector, using the binomial CRR algorithm. Cogent Business and Management. 6 (1) - Times Cited Google Scholar: 2
27	Gonçalves, L., Sebastião, P., Souto, N. & Correia, A. (2019). Extending 5G capacity planning through advanced subscriber behavior-centric clustering. Electronics. 8 (12) - Times Cited Scopus: 2 - Times Cited Google Scholar: 2

28	Lopes, B., Catarino, S., Souto, N., Dinis, R. & Cercas, F. (2018). Robust joint synchronization and channel estimation approach for frequency-selective environments. IEEE Access. 6, 53180-53190 - Times Cited Web of Science®: 18 - Times Cited Scopus: 19 - Times Cited Google Scholar: 20
29	Lopes, H. & Souto, N. (2018). Iterative signal detection for large scale GSM-MIMO systems. IEEE Transactions on Vehicular Technology. 67 (8), 7734-7738 - Times Cited Web of Science®: 13 - Times Cited Scopus: 13 - Times Cited Google Scholar: 19
30	Souto, N. M. B. & Lopes, H. A. (2017). Efficient recovery algorithm for discrete valued sparse signals using an ADMM approach. IEEE Access. 5, 19562-19569 - Times Cited Web of Science®: 7 - Times Cited Scopus: 5 - Times Cited Google Scholar: 11
31	Gonçalves, L., Sebastião, P., Souto, N. & Correia, A. (2017). On the impact of user segmentation and behaviour analysis over traffic generation in beyond 4G networks. Transactions on Emerging Telecommunications Technologies. 28 (1) - Times Cited Web of Science®: 5 - Times Cited Scopus: 5 - Times Cited Google Scholar: 6
32	Afonso, L., Souto, N., Sebastião, P., Ribeiro, M., Tavares, T. & Marinheiro, R. (2016). Cellular for the skies: exploiting mobile network infrastructure for low altitude air-to-ground communications. IEEE Aerospace and Electronic Systems Magazine. 31 (8), 4-11 - Times Cited Web of Science®: 51 - Times Cited Scopus: 45 - Times Cited Google Scholar: 71
33	Souto, N. & Dinis, R. (2016). MIMO detection and equalization for single carrier systems using the alternating direction method of multipliers. IEEE Signal Processing Letters. 23 (12), 1751-1755 - Times Cited Web of Science®: 17 - Times Cited Scopus: 20 - Times Cited Google Scholar: 23
34	Souto, N., Ribeiro, M. & Sebastião, P. (2016). Semidefinite relaxations for MIMO transmissions with high-order QAM constellations. IEEE Signal Processing Letters. 23 (7), 984-988 - Times Cited Web of Science®: 5 - Times Cited Scopus: 6 - Times Cited Google Scholar: 7
35	Souto, N., Dinis, R., Correia, A. & Reis, C. (2015). Interference-aware iterative block decision feedback equalizer for single-carrier transmission. IEEE Transactions on Vehicular Technology. 64 (7), 3316-3321 - Times Cited Web of Science®: 11 - Times Cited Scopus: 11 - Times Cited Google Scholar: 20
36	Souto, N., Dinis, R. & Silva, J. (2014). Impact of channel estimation errors on SC-FDE systems. IEEE Transactions on Communications. 62 (5), 1530-1540 - Times Cited Web of Science®: 30 - Times Cited Scopus: 28 - Times Cited Google Scholar: 40

37	Silva, M. M., Correia, A., Souto, N., Seguro, J., Gomes, P. & Dinis, R. (2012). On the multi-resolution techniques for LTE-Advanced. Wireless Personal Communications. 66 (4), 833-853 - Times Cited Web of Science®: 3 - Times Cited Scopus: 3 - Times Cited Google Scholar: 4
38	Silva, F., Dinis, R., Souto, N. & Montezuma, P. (2012). Approaching the matched filter bound with block transmission techniques. Transactions on Emerging Telecommunications Technologies. 23 (1), 76-85 - Times Cited Web of Science®: 15 - Times Cited Scopus: 16 - Times Cited Google Scholar: 19
39	J. Silva, Souto, N., Dinis, R. & Montezuma, P (2012). Single-carrier frequency domain equalisation with hierarchical constellations: an efficient transmission technique for broadcast and multicast systems. IET Communications. 6 (13), 2065-2073 - Times Cited Web of Science®: 18 - Times Cited Scopus: 24 - Times Cited Google Scholar: 27
40	Souto, N., Dinis, R. & Silva, J. C. (2012). Performance bound for generalised multilevelquadrature amplitude modulations constellations in multipath Rayleigh fading channels with imperfect channel estimation. IET Communications. 6 (11), 1537-1543 - Times Cited Web of Science®: 2 - Times Cited Scopus: 2 - Times Cited Google Scholar: 2
41	Souto, N., R. Dinis, Dinis, R., Dinis, R., R. Dinis & Silva, J. (2010). Analytical Matched Filter Bound for M-QAM Hierarchical Constellations with Diversity Reception in Multipath Rayleigh Fading Channels. IEEE Transactions on Communications. 58, 737-741 - Times Cited Web of Science®: 13 - Times Cited Scopus: 13 - Times Cited Google Scholar: 13
42	Souto, N., Dinis, R., Silva, J. & Carvalho, P. (2010). Iterative multipacket detection for high throughput transmissions in OFDM systems. IEEE Transactions on Communications. 58 (2), 429-432 - Times Cited Web of Science®: 8 - Times Cited Scopus: 8 - Times Cited Google Scholar: 10
43	Correia, A., Lopes, A. A., Seguro, J., Gomes, P. & Souto, N. (2010). Interference coordination for E-MBMS transmissions in LTE-advanced. International Journal of Digital Multimedia Broadcasting. 2010, 689705 - Times Cited Web of Science®: 1 - Times Cited Scopus: 2 - Times Cited Google Scholar: 5
44	Correia, A., Souto, N., Soares, A., Dinis, R. & Silva, J. (2009). Multiresolution with hierarchical modulations for Long Term Evolution of UMTS. EURASIP Journal on Wireless Communications and Networking. - Times Cited Web of Science®: 8 - Times Cited Scopus: 7 - Times Cited Google Scholar: 14
45	Souto, N., Dinis, R., Cercas, F., Silva, J. & Correia, A. (2008). Transmitter/Receiver method for supporting hierarchical modulations in MBMS transmissions. Wireless Personal Communications. 45 (1), 45-65 - Times Cited Web of Science®: 6 - Times Cited Scopus: 5 - Times Cited Google Scholar: 10

46	Soares, A., Silva, J. C., Souto, N., Leitão, F. & Correia, A. (2007). MIMO based radio resource management for UMTS multicast broadcast multimedia services. Wireless Personal Communications. 42 (2), 225-246 - Times Cited Web of Science®: 1 - Times Cited Scopus: 3 - Times Cited Google Scholar: 6
47	Correia, A. M. C., Silva, J. C. M., Souto, N. M. B., Silva, L. A. C., Boal, A. B. & Soares, A. B. (2007). Multi-resolution broadcast/multicast systems for MBMS. IEEE Transactions on Broadcasting. 53 (1), 224-233 - Times Cited Web of Science®: 65 - Times Cited Scopus: 70 - Times Cited Google Scholar: 97
48	Soares, A., Souto, N., Silva, J. C., Eusébio, P. & Correia, A. (2007). Effective radio resource management for MBMS in UMTS networks. Wireless Personal Communications. 42 (2), 185-211 - Times Cited Web of Science®: 3 - Times Cited Scopus: 5 - Times Cited Google Scholar: 12
49	Souto, N. M. B., Cercas, F. A. B., Dinis, R. & Silva, J. C. M. (2007). On the BER performance of hierarchical M-QAM constellations with diversity and imperfect channel estimation. IEEE Transactions on Communications. 55 (10), 1852-1856 - Times Cited Web of Science®: 17 - Times Cited Scopus: 19 - Times Cited Google Scholar: 30
50	Souto, N., Silva, J. C., Cercas, F., Correia, A. & Rodrigues, A. (2007). Low rate convolutional and turbo codes based on non-linear cyclic codes. Wireless Communications and Mobile Computing. 7 (1), 23-34 - Times Cited Web of Science®: 1 - Times Cited Scopus: 1 - Times Cited Google Scholar: 2
51	Silva, J. C., Souto, N., Cercas, F., Dinis, R., Rodrigues, A. & Correia, A. (2007). Equalization based receivers for wideband MIMO/BLAST systems. Wireless Personal Communications. 40 (3), 291-304 - Times Cited Scopus: 1 - Times Cited Google Scholar: 7
52	Souto, N., Soares, A., Eusébio, P., Correia, A. & Silva, J. C. (2006). Effective radio resource management for multimedia broadcast/multicast services in UMTS networks. EURASIP Journal on Wireless Communications and Networking. - Times Cited Web of Science®: 2 - Times Cited Scopus: 2 - Times Cited Google Scholar: 6

• Books and Book Chapters

- Book author

1	Silva, J., Souto, N. & Pereira, J. (2021). Improved Methods for the Valuation of Deferred Tax Assets. LAP Lambert Academic Publishing GmbH & Co.KG.
2	M. M. Silva, Correia, A., R. Dinis, Souto, N. & Silva, J. (2013). Transmission Techniques for 4G Systems. CRC Press. - Times Cited Google Scholar: 31

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79	Silva, J. C., Souto, N. & Cercas, F. (2004). Parity concatenated turbo codes: Study of their structure and performance bounds. In Oppermann, I. (Ed.), Eighth IEEE International Symposium on Spread Spectrum Techniques and Applications (ISSSTA 2004). (pp. 300-304). Sydney, NSW, Australia: IEEE.
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82	Souto, N., Silva, J., Correia, A., Cercas, F. & António J. Rodrigues (2004). Transmit diversity schemes for high speed downlink packet access in 3.5G cellular systems. In Eighth IEEE International Symposium on Spread Spectrum Techniques and Applications. (pp. 623-627). Sydney, NSW, Australia: IEEE. - Times Cited Google Scholar: 2
83	Silva, J., Souto, N., Correia, A., Cercas, F. & António J. Rodrigues (2004). Multipath interference canceller for high speed downlink packet access in enhanced UMTS networks. In Eighth IEEE International Symposium on Spread Spectrum Techniques and Applications. (pp. 609-612). Sydney, NSW, Australia: IEEE. - Times Cited Scopus: 6 - Times Cited Google Scholar: 10
84	Souto, N., Silva, J., Correia, A., Cercas, F., M. M. Silva, M. Marques da Silva...Ribeiro, M. (2004). Multi-user detector schemes for the UMTS uplink transmission. In Eighth IEEE International Symposium on Spread Spectrum Techniques and Applications. (pp. 364-368). Sydney, NSW, Australia: IEEE. - Times Cited Scopus: 4
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86	H. Meinedo, Souto, N. & J.P. Neto (2001). Speech recognition of broadcast news for the European Portuguese language. In IEEE Workshop on Automatic Speech Recognition and Understanding, 2001. ASRU '01. (pp. 319-322). Madonna di Campiglio, Italy: IEEE. - Times Cited Web of Science®: 3 - Times Cited Scopus: 11 - Times Cited Google Scholar: 25

- Talk

1	Pavia, J.P., Souto, N. & Ribeiro, M. (2018). Design of Novel Filters in the Development of New Technologies for the THz using Frequency Selective Surfaces. XII Encuentro Iberico de Electromagnetismo Computacional - EIEC.

2	L. Murilhasd, Saraiva, T., Sebastião, P., Souto, N., Cercas, F. & Correia, A. (2015). Development of a new system to control and monitor ground vehicles using heterogeneous wireless networks. Conftele 2015 - 10th Conference on Telecommunications.
3	Gil Dias, Correia, A., Souto, N., Nuno Souto & Sebastião, P. (2015). Performance of networked femtocells with the interference of LTE-A macrocells. Conference on Telecommunications, Conftele.

- **Other Publications**

- Report

1	Souto, N., Correia, A., Rui Dinis, Atílio Gameiro & Rodolfo Oliveira (2014). Relatório de Progresso.

Research Projects

Project Title	Role in Project	Partners	Period
Soluções inteligentes para uma agricultura sustentável, preditiva e autónoma	Researcher	IT-Iscte, IT-Iscte, TOMIX - Leader (Portugal), Adega Cooperativa São Mamede da Ventosa, CRL - (Portugal), Centro Operativo e Tecnológico Hortofrutícola Nacional - (Portugal), FCUL - (Portugal), Associação para a Valorização Agraria - (Portugal), Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa - (Portugal), FLOWAKE - (Portugal), IMPACTWAVE - (Portugal), INESC TEC - (Portugal), Instituto Nacional de Investigação Agrária e Veterinária, I.P. - (Portugal), IPL - (Portugal), Laboratório Colaborativo para a Inovação Digital na Agricultura - (Portugal), Luis Vicente - (Portugal), OPTIMIZEPLANET - (Portugal)	2020 - 2023
Cooperative Multi-band Access Strategies for 5G Ultra Dense Networks	Local Coordinator	IT-Iscte	2016 - 2018
Advanced PHY/MAC design for Very Low Latency Network-assisted Machine Type Communications	Local Coordinator	IT-Iscte	2016 - 2018
Joint Cooperative and Cognitive Strategies for Heterogeneous Wireless Systems	Local Coordinator	IT-Iscte	2014 - 2016
MOG-QC on the GO - Desenvolvimento de um sistema integrado de controlo da qualidade de conteúdos audiovisuais	Local Coordinator	IT-Iscte (MSP-IUL)	2013 - 2015

Advanced PHY/MAC Design for Infrastructure-less Networks	Local Coordinator	IT-Iscte	2013 - 2015
Remote Piloted Semi-Autonomous Aerial Surveillance System Using Terrestrial Wireless Networks	Local Coordinator	IT-Iscte	2012 - 2014
LTE-Advanced Enhancements using Femtocells	Researcher	IT-Iscte	2012 - 2014
Advanced Code and Receiver Designs for Transmission over Selective Radio Channels	Researcher	IT-Iscte	2010 - 2013
Comparison of WiMAX and LTE on a Personal Cell Scenario for the Provision of Multimedia Broadcast/Multicast Services	Researcher	IT-Iscte	2008 - 2010
Advanced MBMS for the Future Mobile World	Researcher	IT-Iscte	2006 - 2008
Satellite Ground Station for Study and Development of Radio Communications	Researcher	IT-Iscte	2018
Broadcasting and Multicasting Over Enhanced UMTS Mobile Broadband Networks	Researcher	IT-Iscte, PTIN - Leader (Portugal)	2004 - 2006
SEACORN	Researcher	IT-Iscte	2002 - 2004

Academic Management Positions

Sub-diretor (2025 - 2028)
Unit/Area: School of Technology and Architecture

Coordenador do 1º Ano (2024 - 2025)
Unit/Area: Master Degree in Telecommunications and Computer Engineering

Coordenador do 2º Ano (2024 - 2025)
Unit/Area: Master Degree in Telecommunications and Computer Engineering

Director (2024 - 2025)
Unit/Area: Master Degree in Telecommunications and Computer Engineering

Director (2022 - 2024)
Unit/Area: Master Degree in Telecommunications and Computer Engineering

Coordenador do 2º Ano (2021 - 2023)
Unit/Area: Master Degree in Telecommunications and Computer Engineering

Coordenador do 1º Ano (2021 - 2023)
Unit/Area: Master Degree in Telecommunications and Computer Engineering

Director (2020 - 2022)
Unit/Area: Master Degree in Telecommunications and Computer Engineering

Coordenador do 1º Ano (2018 - 2019)
Unit/Area: Master Degree in Telecommunications and Computer Engineering

Coordenador do 1º Ano (2016 - 2018)
Unit/Area: Master Degree in Telecommunications and Computer Engineering

Coordenador do 1º Ano (2016 - 2017)
Unit/Area: Master Degree in Telecommunications and Computer Engineering

Coordenador do 1º Ano (2014 - 2016)
Unit/Area: Master Degree in Telecommunications and Computer Engineering

Coordenador do 2º Ano (2011 - 2014)
Unit/Area: Bachelor Degree in Telecommunications and Computer Engineering

Research Networks

Research Network Name	Representative Role	Period
MiFuture - ultra-massive MIMO for future cell-free heterogeneous networks	Participante	2026

Professional Associations

IEEE (Since 2003)

Organization/Coordination of Events

Type of Organization/Coordination	Event Title	Organizer	Year
Member of non-scientific event's organizing committee	Co-organizer of the Special Session “Capacity Enhancing Techniques” in the “22nd European Signal Processing Conference (EUSIPCO), 2014”		Since 2014
Member of non-scientific event's organizing committee	Workshop “Future 4G Mobile Networks”		Since 2010

Products

Product Type	Product Title	Detailed Description	Year

Patent	Method and system for intercepting and controlling target-drones	The present application relates to a method and a system for intercepting and controlling target-drones (2), allowing to control the target-drone's flight route (4), causing it to land in a predetermined landing position. For that purpose, the method of the invention provides the configuration of flight routes (4) for controlling the target-drone's flight path in order to direct it to the landing position, without causing any physical damage to the target-drone (1). This control is achieved by using police-drones (1) which are adapted to transmit redirection signals (3) used as a way to program a new flight route (4) for the at least one target-drone (2) to a landing position.	2025
Patent	METHOD AND SYSTEM FOR INTERCEPTING AND CONTROLLING TARGET-DRONES	The present application relates to a method and a system for intercepting and controlling target-drones (2), allowing to control the target-drone's flight route (4), causing it to land in a predetermined landing position. For that purpose, the method of the invention provides the configuration of flight routes (4) for controlling the target-drone's flight path in order to direct it to the landing position, without causing any physical damage to the target-drone (1). This control is achieved by using police-drones (1) which are adapted to transmit redirection signals (3) used as a way to program a new flight route (4) for the at least one target-drone (2) to a landing position.	2023
Patent	A PORTABLE EQUIPMENT FOR TRANSPORTING COUNTERMEASURE DEVICES	It is an object of the present invention a portable equipment for transporting at least one countermeasure device adapted to act on unmanned system. It provides a portable base station that allows the storage and transport of countermeasure devices to remote locations, ensuring their operability for long periods of time. The equipment (1) is comprised by an envelope (2), defining a loading volume containing at least a docking platform comprising a battery charging station, geolocation module and a communication module. The equipment may also comprise a handle (3) enabling it to be carried.	2023
Patent	SISTEMA MÓVEL PARA IMOBILIZAR E DESVIAR DRONES NÃO AUTORIZADOS		2021

Patent	MÉTODO PARA RESOLUÇÃO EFICIENTE DE COLISÕES DE PACOTES EM SISTEMAS OFDM DE ALTO DÉBITO	-	2012
Patent	MÉTODO DE EMISSÃO E RECEPÇÃO PARA SUPORTE DE SERVIÇOS DE DIFUSÃO EM SISTEMAS WCDMA QUE UTILIZAM CONSTELAÇÕES QAM HIERÁRQUICAS E DETECÇÃO ITERATIVA		2007