Rute C. Sofia

Associate Researcher
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Contacts

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Curriculum

Rute C. Sofia (PhD 2004) is the Industrial IoT Head at fortiss - research institute of the Free State of Bavaria for software intensive services and systems. She is also an Invited Associate Professor of University Lusófona de Humanidades e Tecnologias, and an Associate R
esearcher at ISTAR, Instituto Universitário de Lisboa. Rute's research background has been developed on industrial and on academic context. She was a co-founder of the COPELABS research unit, and the COPELABS scientific director (2013-2017), where she was a Senior Researcher (2010-2019). She has co-founded the Portuguese startup Senception Lda (2013-2019), a startup focused on personal communication platforms.
Her current research interests are: network architectures and protocols; IoT; Edge computing; in-network computing; network mining. Rute holds over 60 peer-reviewed publications in her fields of expertise, and 9 patents. She is an ACM Europe Councilor (2021-2025); an ACM Senior member, an IEEE Senior Member. She was an IEEE ComSoc N2Women Awards co-chair (2020-2021).
Before fortiss, she was an Associate Professor (COPELABS/ULHT, wireless/user-centric networking; sensing; IoT); she co-lead as senior researcher the "Internet Architectures and Networking" area of UTM, INESC-TEC (07-10), focus on wireless/cellular network architectures and user-centric networking; she was (04-07) a senior research scientist in Siemens AG and Nokia-Siemens Networks GmbH, focusing on aspects such as: fixed-mobile convergence; carrier-grade Ethernet; QoS; IPv6 interoperability.
Rute holds a BEng in Informatics Engineering by Universidade de Coimbra (1995); M.Sc.(1999) and Ph.D. (2004) in Informatics by Universidade de Lisboa. During her PhD studies, she was a visiting scholar (2000-2003) at Northwestern University (ICAIR) and at University of Pennsylvania, MNLab, coordinated by Roch Guerin.

Research Interests

Internet of Things
Systems and Networking Architectures
Edge computing
Wireless Networks
Network mining
Mobility Management and Modelling

Academic Qualifications

University/Institution	Type	Degree	Period
Universidade de Lisboa	PhD	Doutoramento em Informática	2004
UPenn	PhD	Visiting Scholar	2003
Northwestern University USA	PhD	VIsiting Scholar	2000
Universidade de Lisboa	M.Sc.	Mestrado em Informática	1999
Universidade de Coimbra	Licenciate	Engenharia Informática	1995

External Professional Activities

Period	Employer	Country	Description
Since 2019	fortiss GmbH	Germany	IIoT competence center
Since 2019	University Lusófona	Portugal	
2013 - 2019	Senception Lda	Portugal	
2010 - 2019	Universidade Lusófona de Humanidades e Tecnologias	Portugal	
2007 - 2010	INESC TEC	Portugal	
2007 - 2007	Nokia Siemens Networks GmbH & Ko CG	Germany	
2004 - 2007	Siemens AG	Germany	
1998 - 2003	FCCN	Portugal	
1996 - 1998	Grupo Forum	Portugal	
1996 - 1996	University of Lisbon	Portugal	
--	Bundeswehr University Munich	Germany	

Supervisions

• Ph.D. Thesis

- Ongoing

	Student Name	Title/Topic	Language	Status	Institution
1	Ben Schneider	Flexible Wireless Time-aware Scheduling	English	Developing	Universidade Técnica de Munique (TUM)
2	Nisrine Bnouhanna	IoT Thing to Service Matching	English	Developing	Universidade Técnica de Munique (TUM)
3	Liliana Inocêncio de Carvalho	--	English	Developing	Universidade Lusófona
4	Rui Pascoal	--	English	Developing	Iscte
5	Francisco de Melo Pereira	--	English	Developing	Universidade Lusófona
6	Rui Miguel Simão Pascoal	Mobile Pervasive Augmented Reality Systems	English	Developing	Iscte
7	Daniel Maniglia Silva	--	English	Developing	Universidade Lusófona

- Concluded

	Student Name	Title/Topic	Language	Institution	Concluding Year
1	A. de Oliveira Jr.	--	English	MAP-i, Universidade do Minho	2014
2	N. Chama	--	English	MAP-TELE, Universidade de Aveiro	2014

• M.Sc. Dissertations

- Ongoing

	Student Name	Title/Topic	Language	Status	Institution
1	Omar Aponte	--	English	Developing	Universidade Lusófona de Humanidades e Tecnologias
2	Erkan Karabulut	ML-based data classification and data aggregation on the edge	English	Developing	Universidade Tecnica de Munique (TUM)

- Concluded

	Student Name	Title/Topic	Language	Institution	Concluding Year

1	João Maurício	--	English	COPELABS/ULHT	2013
2	João Mota	--	Portuguese	Iscte	2011
3	Luís Carvalho	--	English	Iscte	2009
4	M. Rajyalakshmi	--	English	Siemens AG/Technisches Universitaet Muenchen	2005
5	W. Paprowicz	--	English	Siemens AG/University of Cracow	2005
6	D. Jianglin	--	English	Siemens AG/Technisches Universitaet Muenchen	2005
7	F. Brieler	--	Portuguese	Bundeswehr Universität Muenchen, Fakultat für Informatik	2004
8	M. Popa	--	Portuguese	Bundeswehr Universität Muenchen, Fakultat für Informatik.	2004

Total Citations

Web of Science®	370
Scopus	630

Publications

- **Scientific Journals**

- Scientific journal paper

1	Pascoal, R., Almeida, A. M. de. & Sofia, R. C. (2025). Reducing information overload with machine learning in mobile pervasive augmented reality systems. IEEE Access. 13, 155155-155166 - Times Cited Google Scholar: 2
2	Erkan Karabulut & Sofia, Rute C. (2023). An Analysis of Machine Learning-Based Semantic Matchmaking. IEEE Access. 11, 27829-27842 - Times Cited Web of Science®: 5 - Times Cited Scopus: 7 - Times Cited Google Scholar: 8

3	Sofia, Rute C., Doug Dykeman, Peter Urbanetz, Akram Galal & Dushyant Anirudhdhabhai Dave (2023). Dynamic, Context-Aware Cross-Layer Orchestration of Containerized Applications. IEEE Access. 11, 93129-93150 - Times Cited Web of Science®: 5 - Times Cited Scopus: 8 - Times Cited Google Scholar: 22
4	Silva, Daniel A. M., Carvalho, Liliana I., Carvalho, Liliana I., Soares, José & Sofia, Rute C. (2021). A Performance Analysis of Internet of Things Networking Protocols: Evaluating MQTT, CoAP, OPC UA. Applied Sciences. 11 (11), 4879 - Times Cited Web of Science®: 70 - Times Cited Scopus: 105 - Times Cited Google Scholar: 171
5	Pascoal, R., de Almeida, A. & Sofia, R. C. (2020). Mobile pervasive augmented reality systems - MPARS: the role of user preferences in perceived quality of experience in outdoor applications. ACM Transactions on Internet Technology. 20 (1), 1-17 - Times Cited Web of Science®: 14 - Times Cited Scopus: 16 - Times Cited Google Scholar: 31
6	Silva, Daniel A. M., Carvalho, Liliana I., Soares, José & Sofia, Rute C. (2020). A Performance Analysis of Internet of Things NetworkingProtocols: Evaluating MQTT, CoAP, OPC-UA (under submission). ACM Transactions on Internet of Things.
7	Borrego, C., Amadeo, M., Molinaro, A., Mendes, P., Sofia, Rute C., Magaia, N....Borrell, J. (2020). Forwarding in opportunistic information-centric networks: an optimal stopping approach. IEEE Communications Magazine. 58 (5), 56-61 - Times Cited Web of Science®: 8 - Times Cited Scopus: 8 - Times Cited Google Scholar: 11
8	Da Silva, D. M. A. & Sofia, R. C. (2020). A discussion on context-awareness to better support the IoT cloud/edge continuum. IEEE Access. 8, 193686-193694 - Times Cited Web of Science®: 5 - Times Cited Scopus: 11 - Times Cited Google Scholar: 29
9	Carvalho, L. I. & Sofia, R. C. (2020). A review on scaling mobile snsing platformsfor human activity recognition: challenges and recommendations for future research. IoT. 1 (2), 451-473 - Times Cited Web of Science®: 9 - Times Cited Scopus: 13 - Times Cited Google Scholar: 15
10	Sofia, R. C. & Mendes, P. M. (2019). An overview on push-based communication models for information-centric networking. Future Internet. 11 (3) - Times Cited Scopus: 22 - Times Cited Google Scholar: 33
11	Sofia, R. C. (2019). Guidelines towards information-driven mobility management. Future Internet. 11 (5), 111 - Times Cited Web of Science®: 4 - Times Cited Scopus: 4 - Times Cited Google Scholar: 4

12	Sarros, C.-A., Diamantopoulos, S., Rene, S., Psaras, I., Lertsinsrubtavee, A., Molina-Jimenez, C....Tsaoussidis, V. (2018). Connecting the edges: a universal, mobile-centric opportunistic communications architecture. IEEE Communications Magazine. 56 (2), 136-143 - Times Cited Web of Science®: 18 - Times Cited Scopus: 21
13	Lopes, L. A., Sofia, R. C., Haci, H. & Zhu, H. (2016). A proposal for dynamic frequency sharing in wireless networks. IEEE/ACM Transactions on Networking. 24 (5), 2621-2633 - Times Cited Web of Science®: 8 - Times Cited Google Scholar: 9
14	Sofia, R. C., Mendes, P., Damásio, M. J., Henriques, S., Giglietto, F., Giambitto, E....Bogliolo, A. (2012). Moving towards a socially-driven internet architectural design. Computer Communication Review. 42 (3), 39-46 - Times Cited Web of Science®: 9 - Times Cited Scopus: 9 - Times Cited Google Scholar: 20
15	Chama, N. & Sofia, R. C. (2011). A discussion on developing multihop routing metrics sensitive to node mobility. Journal of Communications. 6 (1), 56-67 - Times Cited Scopus: 5 - Times Cited Google Scholar: 16
16	Ray, S., Guérin, R., Kwong, K.-W. & Sofia, R. C. (2010). Always acyclic distributed path computation. IEEE/ACM Transactions on Networking. 18 (1), 307-319 - Times Cited Web of Science®: 27 - Times Cited Scopus: 32 - Times Cited Google Scholar: 169
17	Sofia, R. C. (2009). A survey of advanced ethernet forwarding approaches. IEEE Communications Surveys and Tutorials. 11 (1), 92-115 - Times Cited Web of Science®: 32 - Times Cited Scopus: 26 - Times Cited Google Scholar: 59
18	Sofia, R. C. & Mendes, P. (2008). User-provided networks: consumer as provider. IEEE Communications Magazine. 46 (12), 86-91 - Times Cited Web of Science®: 58 - Times Cited Scopus: 73 - Times Cited Google Scholar: 132

- Scientific journal editor

1	Sofia, Rute C. (2022). IEEE Network.
2	Sofia, Rute C. (2022). IEEE Access.
3	Sofia, Rute C. (2022). MDPI Applied sciences Special Issue State-of-Art of Network Architectures and Protocols for Industrial IoT. Switzerland. MDPI.
4	Sofia, Rute C., Mendes, P., Tsaoussidis, V., de Cola, Tomaso, Burleigh, Scott, Dong, Mianxiong...Cerqueira, Eduardo (2022). IEEE Access special section on "Internet of Space": Networking Architectures and Protocols to Support Space-Based Internet Services. IEEE. - Times Cited Web of Science®: 1 - Times Cited Scopus: 1 - Times Cited Google Scholar: 1

5	Sofia, Rute C., Schooler, Eve, Winkler, Chris & Kutscher, Dirk (2020). ACM Transactions on Internet Technology, SI on Evolution of IoT Networking Architectures. ACM.

• Books and Book Chapters

- Book author

1	Sofia, Rute C. (2020). Global Mobility Management in Next Generation Networks. Cambridge Scholars.

- Book editor

1	Sofia, Rute C. (2023). Shaping the Future of IoT with Edge Intelligence How Edge Computing Enables the Next Generation of IoT Applications. River Publishers. - Times Cited Google Scholar: 11
2	Sofia, Rute C. (2023). 6G visions for a sustainable and people-centric future - from com- munications to services, the CONASENSE perspective. River Publishers. - Times Cited Google Scholar: 3

- Book chapter

1	Sofia, Rute C. (2023). Latest Advances on Deterministic on Deterministic Wired/Wireless Industrial Networks. In 6G Connectivity-Systems, Technologies, and applications.
2	Sofia, R. C., Coutinho, C., Scivoletto, G., Insolvibile.G., Deshmukh, R., Schneider, A....Mastos, T. (2023). The EFPF approach to manufacturing applications across edge-cloud architectures. In Shaping the future Iot with edge intelligence: How edge computing enables the next generation of IoT applications. (pp. 319-347).: River Publishers. - Times Cited Google Scholar: 1
3	Sofia, R. C. (2023). The role of social-aware networking on supporting 6G IoT. In Ramjee Prasad, Rute C. Sofia (Ed.), 6G visions for a sustainable and people-centric future: From communications to services, the CONASENSE perspectiv. (pp. 55-78).
4	Sofia, Rute C. & Bnouhanna, Nisrine (2023). IoT Things to Service Matchmaking at the Edge. In Shaping the Future of IoT with Edge Intelligence - How Edge Computing Enables the Next Generation of IoT Applications. - Times Cited Scopus: 1 - Times Cited Google Scholar: 1
5	Sofia, Rute C., Carvalho, Liliana I., Melo Pereira, Francisco & Dattagupta, Samrat (2019). The role of Smart Data in Inference of human behavior and interaction. In K.-C. Li, Q. Zhang. L. T. Yang, B. Di Martino (Ed.), Smart data: state-of-the-art and perspectives in computing and applications.: CRCPress, Taylor and Francis. - Times Cited Google Scholar: 12
6	Sofia, Rute C. & Lopes Amaral, Luis (2014). Trust as a Fairness Parameter for Quality of Experience in Wireless networks. In User-Centric Networking Lecture Notes in Social Networks 2014, pp 159-169, User-Centric Networking - Future Perspectives, Springer Lecture Notes in Social Networks. - Times Cited Google Scholar: 6

7	Sofia, Rute C., Condeixa, Tiago & Sargento, Susana (2014). Mobility Estimation in the Context of Distributed Mobility Management. In Chapter IV, User-Centric Networking - Future Perspectives, Springer Lecture Notes in Social Networks, 2014, pp 289-310. Ed. Aldini & Bogliolo, ISBN 978-3-319-05217-5. - Times Cited Google Scholar: 4
8	Barcelo-Arroyo, F., Gorawski, M., Grochla, K., Martín-Escalona, I., Po?ys, K., Ribeiro, A.G....Zola, E. (2014). New trends in mobility modelling and handover prediction. In Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics). - Times Cited Scopus: 2 - Times Cited Google Scholar: 5
9	Antonio Oliveira-Jr & Sofia, Rute C. (2014). Energy-Awareness in Multihop Routing. In Wireless Networking for Moving Objects. Lecture Notes in Computer Science .: Springer. - Times Cited Google Scholar: 8
10	Sofia, Rute C. (2014). User-centric Networking: bringing the Home Network to the Core. In User-Centric Networking - Future Perspectives, Springer Lecture Notes in Social Networks.: Springer. - Times Cited Google Scholar: 9
11	Carlos Ballester Lafuente, Jean-Marc Seigneur, Sofia, Rute C., Christian Silva & Waldir Moreira (2014). Trust Management in ULOOP. In User-Centric Networking - Future Perspectives, Springer Lecture Notes in Social Networks.: Elsevier. - Times Cited Google Scholar: 14
12	Sofia, R., Mendes, P., Zhu, H., Bogliolo, A., Sivrikaya, F. & Di Francesco, P. (2014). User-centric networking: cooperation in wireless networks. In Ganchev I., Curado M., Kassler A. (Ed.), Wireless Networking for Moving Objects. Lecture Notes in Computer Science. (pp. 31-49). Cham: Springer.
13	Sofia, R., Mendes, P. & Moreira Jr, W. (2014). User-Centric networking: living-examples and challenges ahead. In User-Centric Networking. Lecture Notes in Social Networks. (pp. 25-51). Cham: Springer. - Times Cited Google Scholar: 37
14	Chama, N., Oliveira Jr, A., Moreira Jr, W., Mendes, P. & Sofia, R. (2014). User-centric networking: routing aspects. In Aldini A., Bogliolo A. (Ed.), User-Centric Networking. Lecture Notes in Social Networks. (pp. 53-71). Cham: Springer. - Times Cited Google Scholar: 3

• Conferences/Workshops and Talks

- Publication in conference proceedings

1	Mohan, S. H. & Sofia, R. (2023). Fine time measurement based time synchronization for multi-AP wireless industrial environments. In Benslimane, A., and Pierre, S. (Ed.), 2023 19th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob). (pp. 399-404). Montreal, QC, Canada: IEEE. - Times Cited Web of Science®: 4 - Times Cited Scopus: 5 - Times Cited Google Scholar: 6
2	Schneider, Ben, Sofia, Rute C. & Kovatsch, Matthias (2022). A Proposal for Time-Aware Scheduling in Wireless Industrial IoT Environments. In IEEE/IFIP NOMS.: IEEE/IFIP. - Times Cited Scopus: 17 - Times Cited Google Scholar: 23

3	Schneider, Ben, Sofia, Rute C. & Kovatsch, Matthias (2022). A Proposal for Time-Aware Scheduling in Wireless Industrial IoT Environments. In NOMS 2022-2022 IEEE/IFIP Network Operations and Management Symposium. (pp. 1-6). Budapest, Hungary: IEEE. - Times Cited Web of Science®: 8 - Times Cited Google Scholar: 23
4	Bnouhanna, Nisrine, Erkan Karabulut, Sofia, Rute C., Seder, Erin E, Scivoletto, Gabriele & Insolvibile, Gianluca (2022). An Evaluation of a Semantic Thing To Service Matching Approach in Industrial IoT Environments. In 2022 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events (PerCom Workshops). (pp. 433-438). Pisa, Italy: IEEE. - Times Cited Web of Science®: 3 - Times Cited Scopus: 3 - Times Cited Google Scholar: 6
5	Sugandh Huthanahally Mohan & Sofia, Rute C. (2022). Fine Time Measurement Based Synchronization for Industrial Wireless/Wired Networks. In 2022 25th International Symposium on Wireless Personal Multimedia Communications (WPMC). (pp. 357-362). Herning, Denmark: IEEE. - Times Cited Web of Science®: 4 - Times Cited Scopus: 8 - Times Cited Google Scholar: 9
6	Erkan Karabulut, Bnouhanna, Nisrine & Sofia, Rute C. (2021). ML-based data classification and data aggregation on the edge. In Proceedings of the CoNEXT Student Workshop. (pp. 21-22). Virtual Event Germany: ACM. - Times Cited Scopus: 3 - Times Cited Google Scholar: 2
7	Bnouhanna, Nisrine, Sofia, Rute C. & Pretschner, Alexander (2021). IoT Thing To Service Semantic Matching. In 2021 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events (PerCom Workshops). (pp. 418-419). Kassel, Germany: IEEE. - Times Cited Google Scholar: 6
8	Carvalho, Liliana I. & Sofia, Rute C. (2020). Leveraging context-awareness to better support the IoT cloud-edge continuum. In Alsmirat M.,Jararweh Y.,Benkhelifa E.,Saleh I.,Sato H.,Boubchir L. (Ed.), 5th International Conference on Fog and Mobile Edge Computing, FMEC 2020. Paris - Times Cited Web of Science®: 4 - Times Cited Scopus: 10 - Times Cited Google Scholar: 12
9	Silva, D. M. A. da., Asaamoning, G., Orrillo, H., Sofia, R. C. & Mendes, P. M. (2019). An analysis of fog computing data placement algorithms. In MobiQuitous '19: Proceedings of the 16th EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services. (pp. 527-534). Houston Texas, USA: Association for Computing Machinery. - Times Cited Web of Science®: 7 - Times Cited Scopus: 12 - Times Cited Google Scholar: 27
10	Pascoal, R., Almeida, A. de & Sofia, R. C. (2019). Activity recognition in outdoor sports environments: Smart data for end-users involving mobile pervasive augmented reality systems. In UbiComp/ISWC 2019: Adjunct Proceedings of the 2019 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2019 ACM International Symposium on Wearable Computers. (pp. 446-453). Londres: ACM. - Times Cited Web of Science®: 4 - Times Cited Scopus: 8 - Times Cited Google Scholar: 13

11	Aponte, O. & Sofia, R. C. (2019). Mobility management optimization via inference of roaming behavior. In 2019 International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob). (pp. 71-76). Barcelona: IEEE. - Times Cited Scopus: 1 - Times Cited Google Scholar: 1
12	Pascoal, R., Alturas, B., de Almeida, A. & Sofia, R. (2018). A survey of augmented reality: making technologies acceptable in outdoor environments. In 13th Iberian Conference on Information Systems and Technologies (CISTI). Cáceres: IEEE. - Times Cited Scopus: 18 - Times Cited Google Scholar: 29
13	Sofia, Rute C., Mendes, P., Vassilis Tsaoussidis & Sotiris Diamantopoulos (2018). information-centric routing for opportunistic wireless networks. In inProc. ACM ICN 2018.: ACM. - Times Cited Web of Science®: 5 - Times Cited Scopus: 8 - Times Cited Google Scholar: 20
14	Amaral, L., Firdose, S., Sofia, Rute C. & Mendes, P. (2016). USense: A people-centric opportunistic sensing tool. In IEEE (Ed.), IEEE Infocom.
15	Sofia, Rute C., Firdose, S., Lopes, L.A., Moreira, W. & Mendes, P. (2016). NSense: A people-centric, non-intrusive opportunistic sensing tool for contextualizing nearness. In 2016 IEEE 18th International Conference on e-Health Networking, Applications and Services, Healthcom 2016. - Times Cited Scopus: 11 - Times Cited Google Scholar: 31
16	Amaral, L., Sofia, Rute C., Mendes, P. & Moreira, W. (2016). Oi! - Opportunistic data transmission based on Wi-Fi direct. In IEEE Infocom. - Times Cited Scopus: 9 - Times Cited Google Scholar: 22
17	Sofia, Rute C. (2015). A Tool to Estimate Roaming Behavior in Wireless Architectures. In inProc. WWIC 2015. (pp. 247-258). - Times Cited Web of Science®: 1 - Times Cited Scopus: 1 - Times Cited Google Scholar: 16
18	Luis Amaral Lopes, Sofia, Rute C., Hassan Osman & Huseyin Haci (2014). A proposal for elastic spectrum management in wireless local area networks. In 2014 IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS). - Times Cited Web of Science®: 2 - Times Cited Scopus: 3 - Times Cited Google Scholar: 4
19	Chama, N., Sofia, Rute C. & Sargento, S. (2014). Node Spatial correlation aware routing metrics for user-centric environments. In 2014 6th International Conference on New Technologies, Mobility and Security - Proceedings of NTMS 2014 Conference and Workshops. - Times Cited Google Scholar: 3
20	Carlos Ballester, Jean-Marc Seigneur, Paolo di Francesco, Valentin Moreno, Sofia, Rute C., Waldir Moreira...Martins, N. (2013). A user-centric approach to trust management in wi-fi networks. In 2013 IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS). - Times Cited Scopus: 2 - Times Cited Google Scholar: 7

21	Tiago Condeixa, Lucas Guardalben, Tome Gomes, Susana Sargento & Sofia, Rute C. (2013). Make-without-break horizontal IP handovers for Distributed Mobility Management schemes. In 2013 IEEE Globecom Workshops (GC Wkshps). - Times Cited Scopus: 3 - Times Cited Google Scholar: 4
22	Chama, N., Sofia, Rute C. & Sargento, S. (2013). Multihop mobility metrics based on link stability. In Proceedings - 27th International Conference on Advanced Information Networking and Applications Workshops, WAINA 2013. - Times Cited Web of Science®: 2 - Times Cited Scopus: 2 - Times Cited Google Scholar: 5
23	Jr Oliveira, Antonio, Sofia, Rute C. & Costa, António (2012). Energy-efficient Heuristics for Multihop Routing in User-centric Environments. In INProc. he 11th International Conference on Wireless Networks (ICWN'12). - Times Cited Google Scholar: 5
24	Junior, A., Sofia, Rute C. & Costa, A. (2012). Energy-efficient heuristics for multihop routing in user-centric environments. In InProc. The 12th International Conference on Next Generation Wired/Wireless Advanced Networking (NEW2AN 2012). - Times Cited Scopus: 1
25	Ribeiro, A., Sofia, Rute C. & Zúquete, A. (2012). Modeling pause time in social mobility models. In Proceedings of the International Symposium on Wireless Communication Systems. - Times Cited Scopus: 2 - Times Cited Google Scholar: 7
26	Nascimento, A., Sofia, Rute C., Condeixa, T. & Sargento, S. (2012). A decoupling approach for distributed mobility management. In 2012 21st International Conference on Computer Communications and Networks, ICCCN 2012 - Proceedings. - Times Cited Scopus: 3 - Times Cited Google Scholar: 6
27	Junior, A., Sofia, Rute C. & Costa, A. (2012). Energy-awareness in multihop routing. In IFIP Wireless Days. - Times Cited Scopus: 3 - Times Cited Google Scholar: 3
28	Condeixa, T., Sargento, S., Nascimento, A. & Sofia, Rute C. (2012). Decoupling and distribution of mobility management. In 2012 IEEE Globecom Workshops, GC Wkshps 2012. - Times Cited Web of Science®: 1 - Times Cited Google Scholar: 7
29	Nascimento, A., Sofia, Rute C., Condeixa, T. & Sargento, S. (2011). A characterization of mobility management in user-centric networks. In InProc. 11th international conference on Next Generation Wired/Wireless Advanced Networking (New2AN 2011), Smart Spaces and Next Generation Wired/Wireless Networking Lecture Notes in Computer Science Volume 6869. - Times Cited Web of Science®: 5 - Times Cited Scopus: 4 - Times Cited Google Scholar: 23
30	Ribeiro, A.G., Sofia, Rute C. & Zúquete, A. (2011). Improving mobile networks based on social mobility modeling. In Proceedings - International Conference on Network Protocols, ICNP. - Times Cited Scopus: 4 - Times Cited Google Scholar: 11

31	Condeixa, T., Matos, R., Matos, A., Sargento, S. & Sofia, Rute C. (2011). A new perspective on mobility management scenarios and approaches. In InProc. MONAMI 2010: 2nd International ICST Conference on Mobile Networks And Management. Mobile Networks and Management Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering Volume 68, 2011, pp 340-353. - Times Cited Scopus: 1 - Times Cited Google Scholar: 6
32	Chama, N., Sofia, Rute C. & Sargento, S. (2011). Impact of mobility on user-centric routing. In Proceedings - International Conference on Network Protocols, ICNP. - Times Cited Google Scholar: 3
33	Antonio Jr., Sofia, Rute C. & Costa, A. (2011). Energy-efficient routing. In Proceedings - International Conference on Network Protocols, ICNP. - Times Cited Scopus: 1 - Times Cited Google Scholar: 7
34	Júnior, A. & Sofia, Rute C. (2010). Energy-efficient routing in user-centric environments. In Proceedings - 2010 IEEE/ACM International Conference on Green Computing and Communications, GreenCom 2010, 2010 IEEE/ACM International Conference on Cyber, Physical and Social Computing, CPSCom 2010. - Times Cited Scopus: 1 - Times Cited Google Scholar: 11
35	Chama, N. & Sofia, Rute C. (2010). Redefining link duration: Making routing sensitive to mobility. In 2010 IEEE Globecom Workshops, GC'10. - Times Cited Web of Science®: 1 - Times Cited Google Scholar: 4
36	Chama, Namusale & Sofia, Rute C. (2010). Characterizing Multihop Routing Requirements for Node Mobility Support. In CRC 2010. - Times Cited Google Scholar: 2
37	Carvalho, Luis & Sofia, Rute C. (2009). A performance evaluation of multihop relaying vs. multihop routing. In CRC 2009. - Times Cited Google Scholar: 1
38	Chen, L., Cai, X., Sofia, Rute C. & Huang, Z. (2007). A cross-layer fast handover scheme for mobile WiMAX. In IEEE Vehicular Technology Conference. - Times Cited Web of Science®: 19 - Times Cited Scopus: 38 - Times Cited Google Scholar: 65
39	Cai, X., Chen, L., Sofia, Rute C. & Wu, Y. (2007). Dynamic and user-centric network selection in heterogeneous networks. In Conference Proceedings of the IEEE International Performance, Computing, and Communications Conference. - Times Cited Web of Science®: 14 - Times Cited Scopus: 36 - Times Cited Google Scholar: 60
40	Ray, S., Guérin, R. & Sofia, Rute C. (2007). Distributed path computation without transient loops: An intermediate variables approach. In Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics). - Times Cited Web of Science®: 1 - Times Cited Scopus: 1 - Times Cited Google Scholar: 11

41	Ray, S., Guérin, R. & Sofia, Rute C. (2007). A distributed hash table based address resolution scheme for large-scale ethernet networks. In IEEE International Conference on Communications. - Times Cited Web of Science®: 10 - Times Cited Scopus: 21 - Times Cited Google Scholar: 39
42	Sofia, Rute C., Guérin, R. & Veiga, P. (2005). Enabling scalable inter-AS signaling: A load reduction approach. In Proceedings - IEEE Symposium on Computers and Communications. - Times Cited Web of Science®: 1 - Times Cited Scopus: 1 - Times Cited Google Scholar: 2
43	Sofia, Rute C., Guerin, R. & Veiga, P. (2003). SICAP, a shared-segment inter-domain control aggregation protocol. In IEEE International Conference on High Performance Switching and Routing, HPSR. - Times Cited Scopus: 20 - Times Cited Google Scholar: 40
44	Sofia, Rute C., Guerin, R. & Veiga, P. (2002). An investigation of inter-domain control aggregation procedures. In Proceedings - International Conference on Network Protocols, ICNP. - Times Cited Scopus: 1 - Times Cited Google Scholar: 9
45	Sofia, Rute C. & Veiga, PEdro (1999). Study and Presentation of the Security Architecture for IP, IPSec. In Quarto Encontro Nacional do Colégio de Engenharia Electrotécnica, Ordem dos Engenheiros.

- Conference proceedings editor

1	Sofia, Rute C. (2023). 12th CONASENSE Symposium - Proceedings . River Publishers.
2	Sofia, Rute C., Rufino, Paulo & Prasad, Ramjee (2021). 11th CONASENSE international symposium (CONASENSE 2021).
3	Sofia, Rute C., Mendes, P., Panwar, S.S., Kennedy, D., Vallejo, J. & Trossen, D. (2009). Proceedings of the 2009 ACM Conference on Emerging Networking Experiments and Technologies, CoNEXT'09 - Co-located 1st ACM Workshop on User-Provided Networking: Challenges and Opportunities, U-NET '09.

- Talk

1	Sofia, Rute C. (2021). Smart, Decentralised Edges. Next Generation IoT and Edge computing Strategy Forum, Visionary Concepts Session, Invited Talk.
2	Sofia, Rute C. (2021). Wireless Industrial IoT: the next generation of industrial networking - Keynote speech. IARIA ICNS2021.
3	Sofia, Rute C. (2020). The Role of Standardisation and Open Source, IoT and Edge computing. IoT and Edge Computing II: the Far Edge Workshop. Invited Talk.
4	Pascoal, R., de Almeida, A. & Sofia, Rute C. (2019). Contextual Smart Data for Mobile Pervasive Augmented Reality Systems. INForum 2019.
5	Pascoal, R., de Almeida, A. & Sofia, Rute C. (2019). Mobile Pervasive Augmented Reality Systems for Outdoor Environments Contexts. PhD Forum Madness and Forum Posters.

6	Pascoal, R., de Almeida, A. & Sofia, Rute C. (2019). Research Statement: Mobile Pervasive Augmented Reality Systems for Outdoor Environments Contexts. Madness Talk.
7	Sofia, Rute C. & Silva, Daniel A. M. (2019). Improving IoT Data Transmission via Context-aware Edge Based Mechanisms. NetSys 2019 PhD Forum.
8	Carvalho, Liliana I. & Sofia, Rute C. (2019). Supporting Large-scale Pervasive Sensing via Distributed Edge Computing. Netsys 2019.

- Conference paper not in proceedings

1	Pascoal, R., de Almeida, A. & Sofia, R. C. (2019). MPARS — Mobile Pervasive Aumented Reality System. Ciência 2019: Encontro com a Ciência e Tecnologia em Portugal.

• Other Publications

- Non-peer-reviewed papers

1	Sofia, Rute C. (2021). A Vision on Smart, Decentralised Edge Computing Research Directions. EU-IoT White Paper Series. - Times Cited Google Scholar: 7

- Other publications

1	Sofia, Rute C., Kovatsch, Matthias & Paulo Mendes (2021). Requirements for Reliable Wireless Industrial Services. Informational draft, IETF Reliable and Available Wireless Working Group. March 2021, Active. IETF WG RAW draft. - Times Cited Google Scholar: 5
2	Sofia, Rute C., Bnouhanna, Nisrine & Pretschner, Alexander (2021). IoT Thing to Service Semantic Matching. IEEE Percom - PhD Forum. - Times Cited Web of Science®: 1 - Times Cited Scopus: 4

Awards

fortiss Best Mentor Award 2020 (2020)

One to Watch 2017/2018 - Senception (2017)

Research supplement by Institute for Advanced Internet Research (ICAIR), Evanston, USA, Visiting Scholar. (2000)

PhD scholarship by Fundação para a Ciência e Tecnologia, scholarship reference PRAXIS XXI/BD/18246/98. (1999)

Professional Associations

ACM Europe Council (2021 - 2023)

N2Women (2020 - 2021)
IEEE Senior Member (Since 2012)
ACM Senior Member (Since 2010)
ANICT -National Association of Science and Technology Researchers (2009 - 2012)

Organization/Coordination of Events

Type of Organization/Coordination	Event Title	Organizer	Year
Member of scientific event committee	28th IEEE International Conference on Network Protocols (IEEE ICNP 2020)	iEEE	2020
Member of scientific event committee	8th Annual IEEE International Conference on Wireless for Space and Extreme Environments (WISEE 2020)	IEEE	2020
Member of scientific event committee	IEEE 6th International Conference on Smart Computing (IEEE SmartComp 2020)	IEEE	2020
Member of scientific event committee	The 15th International Conference on emerging Networking EXperiments and Technologies (ACM CoNEXT 2020)	ACM	2019
Member of scientific event's organizing committee	Half-day Tutorial: Grafting opportunistic communications onto ICN	ACM ICN 2017	2018
Member of scientific event committee	ACM SIGCOMM Artifacts Evaluation Committee Member	ACM SIGCOMM	2018
Coordination of non-scientific event	ULOOP Project Exhibition, ICT 2013	ICT 2013	2013
Coordination of scientific event (with scientific committee) outside of ISCTE-IUL	EU IST FP7 ULOOP Second Industrial Workshop	Alcatel Lucent and COPELABS/ULHT	2011
Coordination of scientific event (with scientific committee) at ISCTE-IUL	Wordcamp workshop in Portugal		2011
Coordination of scientific event (with scientific committee) at ISCTE-IUL	User-centric Networking Workshop 2010, Globecom 2010	COPELABS/ULHT	2010
Coordination of scientific event (with scientific committee) at ISCTE-IUL	Dagstuhl Seminar reference 10372 - User-centric Networking	Dagstuhl Seminars, Leibniz Zentrum für Informatiks	2010
Coordination of non-scientific event	ReCoop Project Workshop, CeBit 2010	INESC TEC and Nonius Software Lda	2010
Coordination of scientific event (with scientific committee) at ISCTE-IUL	User-centric Networking workshop, first edition	ACM CoNext 2009	2009
Member of scientific event's organizing committee	[https://www.inesctec.pt/en/news/proposal-from-utm-is-one-of-the-finalists-of-ict-2008-19174#about||https://www.inesctec.pt/en/news/proposal-from-utm-is-one-of-the-finalists-of-ict-2008-19174#about]	INESC TEC	2008

Member of scientific event committee	IFIP Networking 2021	IFIP	26 - 29
Member of scientific event committee	Global IoT Summit		Since 25
Member of scientific event committee	5th IEEE international conference on Smart City Innovations	IEEE	24 - 31
Member of scientific event's organizing committee	11th CONASENSE international symposium	CONASENSE	10 - 11
Member of scientific event committee	ACM CoNEXT Artifacts Evaluation Committee Member	ACM CoNext 2018	--
Member of scientific event committee	Technical Programme Committee member	ACM ICN 2018	--
Member of scientific event committee	Technical Programme Committee member	ICACCI 2016	--
Member of scientific event committee	Technical Programme Committee member	ACM CoNext 2015	--
Coordination of scientific event (with scientific committee) at ISCTE-IUL	Technical Programme Committee member		--
Coordination of scientific event (with scientific committee) at ISCTE-IUL	BCFIC - IEEE Baltic Congress on Future Internet and Communication TPC	BCFIC - IEEE Baltic Congress on Future Internet and Communication	--
Coordination of scientific event (with scientific committee) at ISCTE-IUL	IEEE Globecom 2010 ACN Workshop		--

Scientific Editing/Reviewing Activities

Type of Activity	Journal Title	ISSN/Quartile	Period	Language
Scientific journal editor	MDPI Sensors - Topics Board		Since 2021	Portuguese
Scientific journal editor	IEEE Network		Since 2021	English
Scientific journal editor	IEEE Networks		Since 2020	English
Scientific journal editor	ACM Transactions on Internet Technology, Special Issue on the Evolution of IoT Networking Architectures	--	2019 - 2020	English
Scientific journal editor	IEEE ACCESS	--	2018 - 2020	English
Member of scientific journal editing staff	Networks and Communication Technologies Magazine (CCSNET),	--	Since 2005	English
Scientific journal editor	IEEE Communications Magazine Feature Topic on User-centric Networking and Services, Part I	--	--	English

Scientific journal editor	Guest editor, IEEE Communications Magazine Feature Topic on User-centric Networking and Services, Part II	--	--	English

Products

Product Type	Product Title	Detailed Description	Year
Software (Proprietary)	PerSense	PerSense: Communication and Interaction Platform	2018
Software (Open Source)	Oi! Instant Messenger	Oi! an Instant Messenger for Named Data Networking	2017
Software (Open Source)	NSense	NSense	2016
Patent	EP 13186562.9	EP 13186562.9, Rute Sofia, Method and Apparatus for ranking visited networks. COPELABS (SITILABS).	2013
Patent	EP 13191667.8	Method and Apparatus for communication in a wireless network	2013
Patent	EP1903718	EP1903718, T. Camilo, R. Sofia, S. Pasqualini, S. Wevering, P. Nunes. Method for forwarding data packets and access node device. Nokia-Siemens Networks GmbH & Co. KG.	2008
Patent	WO2008104497	WO2008104497, R. Sofia, T. Camilo, A. Hof, P. Sandrine, P. Nunes, Method for enabling network node redundancy in an access network, messages and nodes. Nokia-Siemens Networks GmbH & Co. KG.	2008
Patent	EP1883196	EP1883196, R. Sofia, A. Hof, S. Wevering. Method for packet-based data transmission in a network having mobility functionality. Siemens AG.	2008
Patent	WO2008055908	WO2008055908, T. Camilo, R. Sofia, S. Pasqualini, S. Wevering, P. Nunes. Method for forwarding address prefix data in a network and device. Nokia-Siemens Networks GmbH & Co. KG.	2008
Patent	WO2008031868 (A1)/US2008069107	WO2008031868 (A1)/US2008069107, R. Sofia, R. Guérin, S. Ray. Scalable packet based network. Siemens AG.	2008
Patent	EP 1883196	EP 1883196 A1, R. Sofia, Axel Hof, Stefan Wevering. Method for packet-based data transmission in a network having mobility functionality, Siemens AG, 2008.	2008

Patent	DE102006015044	DE102006015044, T. Camilo, R. Sofia, S. Pasqualini, S. Wevering, P. Nunes. Method of communication of terminal devices via packet-switched mobile radio networks. Siemens AG.	2006