PERSONAL INFORMATION
Family name, First name: Abadal, Sergi
ORCID: 0000-0003-0941-0260 | Researcher ID: L-6004-2014
Date of birth: March 31st, 1986
Nationality: Spanish
URL for web site: https://www.sergiabadal.com

- **EDUCATION**

2016	PhD in Computer Architecture (honors)
	Department of Computer Architecture, Universitat Politècnica de Catalunya (UPC), Spain
	Supervisors: Prof. Albert Cabellos-Aparicio and Prof. Eduard Alarcón
2011	MSc in Information and Communication Technologies (honors)
	School of Telecommunications Engineering, UPC, Spain

- **CURRENT POSITION(S)**

2024 –	Director (management of a research group of over 30 people)
	Nanonetworking Center in Catalunya, UPC, Spain
2022 –	Principal Investigator, ERC Starting Grant WINC (www.winc-project.eu) and others
	Department of Computer Architecture, UPC, Spain

- **PREVIOUS POSITIONS**

2019 – 2023	Project Coordinator, H2020 Project WiPLASH (www.wiplash.eu)
	Department of Computer Architecture, UPC, Spain
2018	Visiting Researcher
	Foundation of Research and Technology – Hellas, Greece
2016 – 2019	Director of Research (coordination of technical activities and fundraising)
	Nanonetworking Center in Catalunya, UPC, Spain
2015	Visiting Researcher
	University of Illinois at Urbana-Champaign, USA

- **FELLOWSHIPS AND AWARDS**

2024	**Medal of the Royal Academy of Engineering in Spain,** awarded yearly to 10 outstanding researchers below 40 years for their excellent engineering research in Spain (www.raing.es)
2022	**Outstanding Milestone Award,** from ACM NanoCom 2022 steering committee, awarded to a researcher active in the field of nanocommunications. Awarded once per year.
2021	**NEC Fellowship,** Research Fellowship Programme of NEC Labs Europe.
2021	**EIC National Champion,** appointed by the European Innovation Council to promote the Horizon Europe program in Spain (less than 100 people have been selected across Europe).
2019	**Editor of the Year Award** from the Nano Communication Networks Journal (Elsevier), awarded to the best performing editor in a natural year. Awarded once per year.
2019	**Young Investigator Award** from the Nano Communication Networks Journal (Elsevier), awarded once per year to an outstanding researcher in the Nanoscale Communications.
2017	**Dissertation Award from UPC**, awarded to the best PhD theses of 2016.
2013 – 2015	**Intel Fellowship,** Doctoral Student Honor Programme of Intel Labs (12 awarded per year).
2012 – 2013	**Full PhD Scholarship,** Department of Computer Architecture, UPC, Spain.
2012	**Accenture award** to the best academic record in the MSc in Information and Communication Technologies at UPC, Spain.
2010	**Vodafone Foundation Fellowship,** awarded to outstanding students at UPC to conduct graduate research in the United States.

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2017 –	6 PostDoc / 18 PhD / 32 MSc / 40 BSc (includes on-going)
	Department of Computer Architecture, UPC, Spain
	Full list: https://sergiabadal.com/team/

- **TEACHING ACTIVITIES**

2020 –	Lecturer – Future Internet Networks, Computer Science School, UPC, Spain
2018 –	Lecturer and Lab Instructor – Object-oriented programming, Telecom School, UPC, Spain
2018 –	Coordinator and Lecturer – Networks and on-line gaming, CITM-UPC, Spain

- **ORGANISATION OF SCIENTIFIC MEETINGS**

2026	Local Organization Chair, IEEE/ACM ESWEEK, Barcelona, Spain (350+ participants)
2022	General Chair, IEEE/ACM NOCS Symposium, Global Virtual Event (80+ part.)
2022	Vice-General Chair, ACM NANOCOM Conference, Barcelona, Spain (60+ part.)
2022	General Chair, IEEE TeraCom Workshop at Globecom'22, Rio de Janeiro, Brazil (50+ part.)
2021	Program Chair, IEEE/ACM NOCS Symposium, Global Virtual Event (50+ participants)
2021	Program Chair, ACM NANOCOM Conference, Catania, Italy (50+ participants)
2021	Workshop Chair, ACM Computing Frontiers, Global Virtual Event (100+ participants)
2020	Co-Founder/General Chair, ACM NanoCoCoA Workshop, Yokohama, Japan (20+ part.)
2020	General Chair, IEEE/ACM NoCARC Workshop, Athens, Greece (90+ participants)
2020	Publicity Chair, IEEE/ACM NOCS Symposium, Hamburg, Germany (30+ participants)
2020	Finance Chair, ACM NANOCOM Conference, College Park, MD, USA (40 participants)
2019	Program Chair, IEEE/ACM NoCARC Workshop, Columbus, USA (50+ participants)
2019	Publicity Chair, ACM NANOCOM Conference, Dublin, Ireland (80+ participants)
2019	Program Chair, ACM AISTECS Workshop, Valencia, Spain (30+ participants)

- **EDITORIAL AND REVIEWING ACTIVITIES**

2025 –	Expert Panel Member, Research Foundation Flanders
2024 –	Associate Editor-in-Chief of Digital Media, IEEE J. Emerg. Sel. Top. Circuits Syst., USA
2023 –	Associate Editor, IEEE Transactions on Mobile Computing, IEEE, USA
2023 –	Associate Editor, IEEE Trans. Mol. Biol. Multi-Scale Commun., IEEE, USA
2023 –	Progress Reviewer EIC TRANSITION and Security Projects, European Commission
2023	Guest Editor, IEEE Journal on Selected Areas in Communications, IEEE, USA
2022	Guest Editor, IEEE Transactions on Nanotechnology, IEEE, USA
2022 –	Proposal Evaluator, MSCA PF, ERC SyG, EIC Transition, Chist-Era, European Commission
2021	External Prize Evaluator, Chinese Academy of Sciences
2021 –	External Grant Evaluator, Qatar National Research Fund
2021	Guest Editor, Journal of Low Power Electronics and Applications, MDPI, Switzerland
2020	External Grant Evaluator, Czech Science Foundation, Czech Republic
2020	Guest Editor, IEEE J. on Emerging and Selected Topics in Circuits and Systems, IEEE, USA
2019 –	Associate Editor, Frontiers in Communications and Networks, Frontiers, Switzerland
2018 –	Associate Editor, Nano Communication Networks Journal, Elsevier, Netherlands
2015 –	Reviewer for Nature Communications, Advanced Materials (Wiley), Advanced Science (Wiley), Advanced Optical Materials (Wiley), Scientific Reports (Nature), IEEE J. on Selected Areas in Communications, IEEE Comms Magazine, IEEE T. on Communications, IEEE Communications Letters, IEEE T. on Antennas and Propagation, IEEE Internet of Things Journal, IEEE T. on Nanotechnology, IEEE T. on Quantum Engineering, IEEE T. on Vehicular Technology, IEEE T. on Very Large Scale Integration, IEEE T. on Circuits and Systems I and II, IEEE T. on Computers, IEEE T. on Multi-Scale Computing Systems, IEEE/OSA Journal of Lightwave Technology, IEEE Access, Computer Networks (Elsevier).
2015 –	Reviewer as member of the TPC of ACM MobiCom (2023-25), IEEE VTC-Fall/VTC-Spring (2018-21), IEEE GLOBECOM (2019-24), IEEE ICC (2022-24), IEEE ISCAS (2019-2024), IEEE MCSoC (2018-21), IEEE/ACM NOCS (2020-22), IEEE SECON 2019, IEEE/ACM NOCARC (2016-18), IEEE GSMM (2016-17), among others.

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

2020 –	Member, European Network on High-performance Embedded Architecture and Compilation (HiPEAC). Requires acceptance from the admissions panel.
2016 –	Professional Member, Institute of Electrical and Electronics Engineers (IEEE)
2016 –	Professional Member, Association of Computing Machinery (ACM)

RESEARCH ACTIVITY RECORD

- PI in 6 research international projects with a total budget of 14.83 M€ (3.28 M€ for his host institution).
- **Coordinator and PI of CERBERUS**, a Horizon Europe EIC Pathfinder project with 6 partners.
- **Coordinator and PI of WiPLASH** (www.wiplash.eu), a Horizon 2020 FET-Open project with 7 partners.
- **PI of AVALON,** a project with 14 partners funded by the European Defense Fund.
- **PI of WINC** (www.winc-project.eu), a project funded by the ERC through the Starting Grant programme.
- Publication record with 174 items:
    - 9 book chapters
    - 52 journal papers (30 Q1, 16 Q2)
    - 86 conference papers
    - 21 abstracts, posters, and other short communications
    - 6 pre-prints
- H-index of 36 with 4281 citations, according to Google Scholar (April 28th, 2025)
- Given 20+ invited talks in universities in Europe, US, Asia (accumulated audience of 300.000 people)
- Served in over 40 workshops and conferences, including positions of general chair, program chair, and publicity chair in the nanocommunications and network-on-chip fields.
- Active as editor and reviewer (300+ reviews) of top-tier Nature, Wiley, IEEE, ACM, and Elsevier journals.

PROJECTS

- **2025 – 2028, European Commission:** Sergi is the PI and coordinator of the CERBERUS: Unlocking the Full Potential of Edge AI through In-memory Computing Based on 2D Materials with Extreme Energy Efficiency, funded by the EU via the EIC Pathfinder Challenges programme. Total: €5.99M (6 partners)
- **2024 – 2027, European Commission:** Sergi is the PI of UPC in AVALON: Underwater Optical Wireless Communication Network for Sea Border Protection and Deep-Sea Exploration, funded by the EU through the European Defence Fund. Total: €3.9M (14 partners)
- **2024 – 2026, Catalan Agency for University and Research:** Sergi is advisor of two industrial PhD grants awarded to two researchers from Telefónica I+D to perform research on the use of physiological signals to improve recommendation systems and large language model training. Total: €42K.
- **2023 – 2027, European Commission:** Sergi is member of the research team of QUADRATURE: Scalable Multi-chip Quantum Architectures Enabled by Cryogenic Wireless/Quantum-Coherent Network-in-Package, funded by the EU through the EIC Pathfinder Open programme. Total: €3.4M (8 partners)
- **2022 – 2027, European Commission:** Sergi is the PI of the project WINC: Wireless Networks within Next-Generation Computing Systems, funded by the EU through the ERC Starting Grant programme. Total: €1.5M (single PI)
- **2021 – 2024, Spanish Ministry of Economy and Competitiveness:** Sergi is member of the research group of the project TRAINER: Investigación en Futuras Redes Totalmente Optimizadas Mediante Inteligencia Artificial, funded by the Spanish government. Total: €300K
- **2019 – 2023, European Commission:** Sergi is the PI and coordinator of the project WIPLASH: Architecting More Than Moore - Wireless Plasticity for Massive Heterogeneous Computer Architectures, funded by the EU through the FET-OPEN programme. Total: €2.99M (7 partners)
- **2017 – 2020, European Commission:** Sergi is director of research of UPC within the project VISORSURF: A Hardware Platform for Software-driven Functional Metasurfaces funded by the EU through the FET-OPEN programme. Total: €5.74M (6 partners)
- **2018 – 2021, Spanish Ministry of Economy and Competitiveness:** Sergi is member of the work group of the project ALLIANCE: Diseñando una infraestructura de red 5G definida mediante conocimiento hacia la próxima sociedad digital funded by the Spanish government. Total: €300K
- **2016 – 2020, National Science Foundation (NSF):** Sergi is an active participant of the project XPS: Breaking the Scalability Wall of Shared Memory through Fast On-Chip Wireless Communication granted by the NSF CCF group. Total: $900K
- **2015 – 2018, Graphene Flagship:** Sergi is a research member of the project TUGRACO: Towards Ubiquitous Graphene-based Communications, which is part of the FLAG-ERA initiative under the hood of the EU Graphene Flagship. Total: €100K
- **2015 – 2018, Spanish Ministry of Economy and Competitiveness:** Sergi is member of the work group of the project SUNSET: Sustainable Network Infrastructure Enabling the Future Digital Society funded by the Spanish government. Total: €150K
- **2012 – 2013, SAMSUNG Global Research Outreach:** Sergi is a research member of the project Graphene-enabled Wireless Communication. Total: €110K

SELECTED PUBLICATIONS

- S. Jog, Z. Liu, A. Franques, V. Fernando, S. Abadal, J. Torrellas, H. Hassanieh, "One Protocol to Rule Them All: Wireless Network-on-Chip using Deep Reinforcement Learning," in Proceedings of NSDI 2021, Virtual Event, April 2021. **(first Spanish research institution to be accepted in NSDI)**

- S. Abadal, A. Jain, R. Guirado, J. López-Alonso, E. Alarcón, "Computing Graph Neural Networks: A Survey from Algorithms to Accelerators," ACM Computing Surveys, 2021. **(Q1, 305 citations)**

- S. Rodrigo, S. Abadal, E. Alarcón, M. Bandic, J. van Someren, C. G. Almudever, "On Double Full-Stack Communications-Enabled Architectures for Multi-Core Quantum Computers," IEEE MICRO, 2021.

- F. Lemic, S. Abadal, W. Tavernier, P. Stroobant, D. Colle, E. Alarcón, J. Marquez-Barja, J. Famaey, "Survey on Terahertz Nanocommunication and Networking: A Top-Down Perspective," IEEE Journal on Selected Areas in Communications, 2021. **(Q1, 157 citations)**

- S. Abadal, C. Liaskos, A. Tsioliaridou, S. Ioannidis, A. Pitsillides, J. Solé-Pareta, E. Alarcón, and A. Cabellos-Aparicio, "Computing and Communications for the Software-Defined Metamaterial Paradigm: A Context Analysis," IEEE Access, vol. 5, pp. 6225-6235, 2017. **(Q1, 91 citations)**

- X. Timoneda, S. Abadal, A. Franques, D. Manessis, J. Zhou, J. Torrellas, E. Alarcón, and A. Cabellos-Aparicio, "Engineer the Channel and Adapt to it: Enabling Wireless Intra-Chip Communication," IEEE Transactions on Communications, vol. 68, no. 5, pp. 3247-3258, 2020. **(Q1, 48 citations)**

- S. Abadal, J. Torrellas, E. Alarcón, and A. Cabellos-Aparicio, "OrthoNoC: A Broadcast-Oriented Dual-Plane Wireless Network-on-Chip Architecture," in IEEE Transactions on Parallel and Distributed Systems, vol. 29, no. 3, pp. 628-641, Mar. 2018. **(Q1, 74 citations)**

- V. Fernando, A. Franques, S. Abadal, S. Misailovic, J. Torrellas, "Replica: A Wireless Manycore for Communication-Intensive and Approximate Data," in Proceedings of the ASPLOS '19, Providence, RI, USA, April 2019. **(A+ conference, 50 citations)**

- S. Abadal, E. Alarcón, M. C. Lemme, M. Nemirovsky and A. Cabellos-Aparicio, "Graphene-enabled Wireless Communication for Massive Multicore Architectures," IEEE Communications Magazine, vol. 51, no. 11, pp. 137-143, November 2013. **(Q1, 191 citations)**

SELECTION OF INVITED TALKS AND SEMINARS

- **Invited talk,** Accelerating Classical and Quantum Computing with Wireless Networks inside Computing Packages, University of Antwerp, June 2024.

- **Invited talk,** "Accelerating Computing with Wireless Networks inside Computing Packages," in the Chinese Association for Artificial Intelligence (CAAI), Remote, February 2023. **(280.000+ views).**

- **Keynote,** "Towards the Internet of Everything with Graphene Antennas and Reconfigurable Intelligent Surfaces," in the 4th International Conference on Emerging Technology Trends in Electronics, Communication and Networking, Surat, India, November 2021.

- **Invited talk,** "Wireless Communications in the Terahertz Band for Massive Heterogeneous Computer Architectures" Terahertz Workshop, Wireless World Research Forum, April 2021 (50+ attendees)

- **Invited Seminar,** "Towards Wireless-enabled Multicore Computer Architectures", University of Glasgow, March 2021 (30+ attendees)

- **Invited talk,** "Wireless Communications in the Terahertz Band for Massive Heterogeneous Computer Architectures" 3rd Towards THz Communications workshop, Virtual, March 2021 (150+ attendees)

- **Talk,** "Wireless Plasticity for Massive Heterogeneous Computer Architectures," in the Heterogeneity Alliance workshop, HiPEAC 2021, Budapest, Hungary, Jan. 2021. (50+ attendees)

- **Invited talk,** "Terahertz Nanocommunication and Networking: Emerging Applications, Approaches, and Open Challenges", ACM Nanocom 2020, College Park, MD, USA, September 2020. (40 attendees)

- **Invited seminar,** "Programmable Metasurfaces for 6G Wireless Communications in the mmWave and THz Bands", remote webinar, Waterford Institute of Technology, June 2020. (60+ attendees)

- **Pitch,** "Wireless In-Package Communications" within the Bell Labs Prize Innovathon, Bell Labs Headquarters, Murray Hill, NJ, USA (30+ attendees, including CEO Marcus Weldon).

- **Invited lecture,** "IoT scaled to the limit: Nanotechnologies applied to Energy Harvesting and Wireless Communications", Int'l School on Data Science and IoT, University of Catania, 2019. (30+ attendees)

- **Invited lecture,** "Software-defined and software-driven metasurface paradigm", Summer School on Tunable and Software-Driven Functional Metasurfaces, Aalto University, June 2018. (20+ attendees)

- **Invited seminar,** "Wireless Communications Within and Between Chips, Metasurfaces, and Other Small Devices", at University at Buffalo, Buffalo, USA, August 2017. (20+ attendees)

- **Invited lecture,** "Wireless Network-on-chip: Let it Broadcast", at the Interconnection Networks course, ECE/CS Schools, Georgia Tech, April 2016. (20+ attendees)

SUPERVISORY EXPERIENCE

6 PostDoc / 18 PhD / 32 MSc / 40 BSc (includes on-going)

Some relevant examples:

- **Ethungshan Shitiri:** Marie Curie postdoctoral fellow at UPC.
- **Filip Lemic:** incoming Marie Curie postdoctoral fellow from University of Antwerpen.
- **George Koutroumpas:** industrial PhD student co-supervised with Telefónica I+D (on-going)
- **Sahar Ben Rached:** PhD student on quantum computing architectures (on-going).
- **Pol Puigdemont:** outgoing BSc thesis at Georgia Tech. Now PhD student at EPFL.
- **Santiago Rodrigo:** PhD (cum laude) with a double degree in ECE and Computer Science.
- **Hamidreza Taghvaee:** PhD (cum laude, UPC award). First employment: postdoc @Cambridge.
- **Robert Guirado:** outgoing BSc thesis at Georgia Tech, MSc thesis at IBM Zurich. National award.
- **Xavier Timoneda:** outgoing BSc thesis at UPC/UIUC (honors). First employment: Huawei, Zurich.
- **Adrián Marruedo:** outgoing BSc thesis at UPC/UIUC (honors). First employment: CFO at Goin.
- **Jorge López Alonso:** MSc thesis at UPC. First employment: Motorola Solutions, Copenhaguen.
- **Roshni Maniraj:** incoming BSc thesis from Amrita Univ. Now MSc student at KTH Sweden.

FULL PUBLICATION LIST

Book chapters:

[B9] E. Emoyon-Iredia, T. Saeed, N. Ashraf, C. Liaskos, M. Segata, P. Casari, S. Abadal, E. Alarcón, A. Pitsillides, M. Lestas, **"Connected Autonomous Driving Using Reconfigurable Intelligent Metasurfaces,"** in Transportation Mobility in Smart Cities, Springer, 2024, Chapter 10.

[B8] H. Taghvaee, S. Abadal, E. Alarcón, A. Cabellos-Aparicio, T. Saeed, A. Pitsillides, O. Tsilipakos, C. Liaskos, A. Tasolamprou, M. Kafesaki, A. Pitilakis, N. Kantartzis, V. Soteriou, M. Lestas, **"The scaling laws of Hypersurfaces,"** in Internet of Materials, CRC Press, 2020, Chapter 8.

[B7] S. Abadal, J. Solé-Pareta, E. Alarcón, A. Cabellos-Aparicio, **"Graphene-Enabled Wireless Nanoscale Networking Communications in the Terahertz Band,"** in Nanoscale Networking and Communications Handbook, CRC Press, 2019, Chapter 1.

[B6] S. Abadal, S. E. Hosseininejad, M. C. Lemme, P. Haring Bolívar, J. Solé-Pareta, E. Alarcón, A. Cabellos-Aparicio, **"Graphene-Based Antenna Design for Communications in the Terahertz Band,"** in Nanoscale Networking and Communications Handbook, CRC Press, 2019, Chapter 2.

[B5] S. Abadal, C. Liaskos, A. Pitsillides, V. Vassiliou, J. Solé-Pareta, A. Cabellos-Aparicio, E. Alarcón, **"Terahertz Programmable Metasurfaces: Networks Inside Networks,"** in Nanoscale Networking and Communications Handbook, CRC Press, 2019, Chapter 3.

[B4] S. Abadal, X. Timoneda, J. Solé-Pareta, E. Alarcón, A. Cabellos-Aparicio, A. Tasolamprou, O. Tsilipakos, C. Liaskos, M. Kafesaki, E. N. Economou, C. M. Soukoulis, A. Pitilakis, N. V. Kantartzis, M. S. Mirmoosa, F. Liu, S. Tretyakov, **"Nanoscale Channel Modeling in Highly Integrated Computing Packages,"** in Nanoscale Networking and Communications Handbook, CRC Press, 2019, Chapter 6.

[B3] S. Abadal, J. Solé-Pareta, E. Alarcón, A. Cabellos-Aparicio, **"Media Access Control for Nanoscale Communications and Networking,"** in Nanoscale Networking and Communications Handbook, CRC Press, 2019, Chapter 9.

[B2] S. Abadal, J. Solé-Pareta, E. Alarcón, A. Cabellos-Aparicio, **"Nanoscale Wireless Communications as Enablers of Massive Manycore Architectures,"** in Nanoscale Networking and Communications Handbook, CRC Press, 2019, Chapter 20.

[B1] S. Abadal, I. Llatser, A. Mestres, J. Solé-Pareta, E. Alarcón and A. Cabellos-Aparicio, **"Fundamentals of Graphene-enabled Wireless On-Chip Networking,"** in Modeling, Methodologies and Tools for Molecular and Nano-scale Communications, Springer Publishing, 2017, pp. 293-317.

Journal Papers:

[J52] A. Wassington, R. Higueras, S. Abadal, **"SkyMap: A Generative Graph Model for GNN Benchmarking,"** Frontiers in Artificial Intelligence, 2024.

[J51] A. Wassington, S. Abadal, **"Bias Reduction via Cooperative Bargaining in Synthetic Graph Dataset Generation,"** Applied Intelligence, 2024.

[J50] A. Brosa-López, F. Lemic, G. Calvo-Bartra, A. Pérez, J. Struye, J. Torres-Gómez, E. Municio, C. Delgado, F. Dressler, E. Alarcón, J. Famaey, S. Abadal, X. Costa-Pérez, **"Toward Standardized**

Performance Evaluation of Flow-guided Nanoscale Localization", IEEE Transactions on Molecular, Biological, and Multi-Scale Communications, 2024.

[J49] M. Bandic, P. le Henaff, A. Ovide, P. Escofet, S. Ben Rached, S. Rodrigo, H. van Someren, S. Abadal, E. Alarcón, C. G. Almudever, S. Feld, **"Profiling quantum circuits for their efficient execution on single- and multi-core architectures,"** Quantum Science and Technology, 2024.

[J48] S. Abadal, P. Galván, A. Mármol, N. Mammone, C. Ieracitano, M. Lo Giudice, A. Salvini, F. C. Morabito, **"Graph Neural Networks for Electroencephalogram Analysis: Alzheimer's and Epilepsy Use Cases,"** Elsevier Neural Networks, 2024.

[J47] F. Rodríguez-Galán, A. Bandara, E. Pereira de Santana, P. Haring Bolívar, E. Alarcón and S. Abadal, **"Time Reversal for Near-Field Communications on Multi-chip Wireless Networks,"** IEEE Communications Magazine, 2024.

[J46] S. Abadal, C. Han, V. Petrov, L. Galluccio, I. F. Akyildiz, J. M. Jornet, **"Electromagnetic Nanonetworks Beyond 6G: From Wearable and Implantable Networks to On-chip and Quantum Communication,"** IEEE Journal on Selected Areas in Communications, vol. 42, no. 8, 2024.

[J45] P. Escofet, A. Ovide, M. Bandic, L. Prielinger, H. Van Someren, S. Feld, E. Alarcón, S. Abadal, C. G. Almudéver, **"Revisiting the Mapping of Quantum Circuits: Entering the Multi-Core Era,"** ACM Transactions on Quantum Computing, 2024.

[J44] K. Ntontin, A.-A. A. Boulogeorgos, S. Abadal, A. Mesodiakaki, S. Chatzinotas, B. Ottersten, **"Perpetual Reconfigurable Intelligent Surfaces Through In-Band Energy Harvesting: Architectures, Protocols, and Challenges,"** IEEE Vehicular Technology Magazine, vol. 19, no. 1, pp. 36-44, 2024

[J43] P. Escofet, A. Ovide, C. G. Almudever, E. Alarcón and S. Abadal, **"Hungarian Qubit Assignment for Optimized Mapping of Quantum Circuits on Multi-Core Architectures,"** IEEE Computer Architecture Letters, 2023.

[J42] R. Guirado, A. Rahimi, G. Karunaratne, E. Alarcón, A. Sebastian and S. Abadal, **"WHYPE: A Scale-Out Architecture with Wireless Over-the-Air Majority for Scalable In-memory Hyperdimensional Computing,"** IEEE Journal on Emerging and Selected Topics in Circuits and Systems, vol. 13, no. 1, 2023.

[J41] K. Ntontin, E. Björnson, A. Boulogeorgos, Z. Abdullah, A. Mesodiakaki, S. Abadal, and S. Chatzinotas, **"Time- and Unit-Cell Splitting Comparison for the Autonomous Operation of Reconfigurable Intelligent Surfaces,"** IEEE Transactions on Green Communications and Networking, 2023.

[J40] N. Ashraf, T. Saeed, H. Taghvaee, S. Abadal, V. Vassiliou, C. Liaskos, A. Pitsillides and M. Lestas, **"Intelligent Beam Steering for Wireless Communication Using Programmable Metasurfaces,"** IEEE Transactions on Intelligent Transportation Systems, 2023.

[J39] S. Abadal, R. Guirado, H. Taghvaee, A. Jain, E. Pereira de Santana, P. Haring Bolívar, M. Saeed, R. Negra, Z. Wang, K-T. Wang, M. C. Lemme, J. Klein, M. Zapater, A. Levisse, D. Atienza, D. Rossi, F. Conti, M. Dazzi, G. Karunaratne, I. Boybat and A. Sebastian **"Graphene-based Wireless Agile Interconnects for Massive Heterogeneous Multi-chip Processors,"** IEEE Wireless Communications Magazine, 2022.

[J38] K. Ntontin, A.-A. A. Boulogeorgos, E. BJörnson, W. A. Martins, S. Kisseleff, S. Abadal, E. Alarcón, A. Papazafeiropoulos, F. Lazarakis, S. Chatzinotas, **"Wireless Energy Harvesting for Autonomous Reconfigurable Intelligent Surfaces,"** IEEE Transactions on Green Communications and Networking, 2022.

[J37] H. Taghvaee, A. Jain, S. Abadal, G. Gradoni, E. Alarcón, A. Cabellos-Aparicio, **"On the Enabling of Multi-user Communications with Reconfigurable Intelligent Surfaces",** IEEE Transactions on Nanotechnology, vol. 21, pp. 413-423, 2022.

[J36] M. Imani, S. Abadal, P. Del Hougne, **"Metasurface-Programmable Wireless Network-on-Chip",** Advanced Science, 2022.

[J35] H. Taghvaee, A. Pitilakis, O. Tsilipakos, A. C. Tasolamprou, N. V. Kantartzis, M. Kafesaki, A. Cabellos-Aparicio, E. Alarcón, and S. Abadal, **"Multi-Wideband Terahertz Communications via Tunable Graphene-based Metasurfaces in 6G Networks,"** IEEE Vehicular Technology Magazine, 2022.

[J34] A. Ganguly, S. Abadal, I. Thakkar, N. Enright Jerger, M. Riedel, M. Babaie, R. Balasubramonian, A. Sebastian, S. Pasricha, and B. Taskin, **"Interconnects for DNA, Quantum, In-Memory and Optical Computing: Insights from a Panel Discussion,"** IEEE Micro, 2022

[J33] T. Saeed, S. Abadal, C. Liaskos, A. Pitsillides, H. Taghvaee, A. Cabellos-Aparicio, V. Soteriou, E. Alarcon, I. F. Akyildiz, M. Lestas, **"Workload Characterization and Traffic Analysis for Reconfigurable Intelligent Surfaces within 6G Wireless Systems,"** IEEE Transactions on Mobile Computing, 2021.

[J32] S. Abadal, A. Jain, R. Guirado, J. López-Alonso, E. Alarcón, **"Computing Graph Neural Networks: A Survey from Algorithms to Accelerators,"** ACM Computing Surveys, vol. 54, no. 9, pp. 191:1-38, 2021.

[J31] F. Lemic, S. Abadal, W. Tavernier, P. Stroobant, D. Colle, E. Alarcón, J. Marquez-Barja, J. Famaey, **"Survey on Terahertz Nanocommunication and Networking: A Top-Down Perspective,"** IEEE Journal on Selected Areas in Communications, vol. 36, no. 9, pp. 1506-1543, 2021.

[J30] K. Rouhi, S. E. Hosseininejad, S. Abadal, M. Khalily, R. Tafazolli**, "Multi-Channel Near-Field Terahertz Communications Using Reprogrammable Graphene-Based Digital Metasurface,"** IEEE/OSA Journal of Lightwave Technology, vol. 39, no. 21, pp. 6893-6907, 2021.

[J29] F. Lemic, S. Abadal, C. Han, J. Marquez-Barja, E. Alarcón, J. Famaey, **"Localization in Power-Constrained Terahertz-Operating Software-Defined Metamaterials,"** Nano Communication Networks (Elsevier), 2021.

[J28] S. Rodrigo, S. Abadal, E. Alarcón, M. Bandic, J. van Someren, C. G. Almudever, **"On Double Full-Stack Communications-Enabled Architectures for Multi-Core Quantum Computers,"** IEEE MICRO, vol. 41, no. 5, pp. 48-56, 2021.

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