



CV date	02/March/2026
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Part A. PERSONAL INFORMATION

First name	Mónica		
Family name	Aguilar Igartua		
e-mail	monica.aguilar@upc.edu	URL Web	
Open Research and Contributor ID (ORCID)	http://www-entel.upc.edu/monica.aguilar/0000-0002-6518-888X		

A.1. Current position

Position	Full Professor		
Initial date	15 July 2025		
Institution	Universitat Politècnica de Catalunya		
Departament/Center	Department of Networking Engineering – Dpto de Ingeniería Telemática		
Country	Spain	Teleph. number	+ 34 934015997
Key words	Data transmission network; Wireless telecommunications, Vehicular networks, Smart cities, Sustainable mobility		

A.2. Previous positions (research activity interruptions, art. 45.2.c)

Period	Position/Institution/Country/Interruption cause
06/April/2001 – 15/July/2025	Associate Professor (UPC)
05/Oct/1995 - 06/April/2001	Assistant Professor (UPC)

A.3. Education

PhD, Licensed, Graduate	University/Country	Data
Postgraduate “University Education in Sciences, Technology, Engineering, Architecture and Mathematics (STEAM)”	Universitat Politècnica de Catalunya	10/10/2024
Ph.D. degree in Telecommunications Engineering	Universitat Politècnica de Catalunya	26/01/2000
Postgraduate “Initial training program for University professors”	Universitat Politècnica de Catalunya	17/07/1997
Degree in Telecommunications Engineering	Universitat Politècnica de Catalunya	15/09/1995

A.4. General indicators of quality of scientific production

Número de sexenios de investigación: **3** (2003-2008) (2013-2018) (2019-2024)

Index h: **21** ([Google Scholar](#)), **12** ([Web of Science](#)), **10** ([Scopus](#))

Number of doctoral thesis tutored (last 10 years): **3** (6 thesis in total)

Number of doctoral thesis co-tutored (last 10 years): **2** (4 thesis in total)

Citations: **1599** ([Google Scholar](#)), **1262** ([Research Gate](#)), **558** ([WoS](#))

Average cites per year (last 5 years): **132** ([Google Scholar](#)), **50** ([WoS](#))

Number of Journal papers in JCR: **35** (1 D1 + 12 Q1 + 15 Q2 + 3 Q3 + 4 Q4); (5 Q1 + 2 Q2) as Guest Editor

Part B. CV SUMMARY (max. 5000 characters, including spaces)

Mónica Aguilar Igartua (<http://www-entel.upc.edu/monica.aguilar>) received her MSc and PhD degrees in telecommunication engineering from the Universitat Politècnica de Catalunya (UPC), Barcelona, Spain, in 1995 and 2000 respectively. She is an Associate Professor in the Department of Networking Engineering at UPC. She is a member of the Smart Services for Information Systems and Communication Networks ([SISCOM](#)) at the UPC, which she currently leads. The SISCOM research group is composed of five professors, one post-doc engineer and several PhD candidates.

The SISCOM research group focuses on technologies that make it possible to provide intelligent services for information services and communication networks. More specifically, the interests of the group are mainly focused on two areas: 1) Communication networks: We work mostly on wireless networks, with either infrastructure or ad hoc and mesh. With the aim of improving their performance, telematics engineering techniques are used. Also, routing protocols are designed and evaluated to guarantee the quality of service required to support intelligent services; 2) Security and privacy of the information: We work on the development of information protection techniques, especially on anonymization of databases to protect users' privacy when these data are being analysed by third parties. These techniques allow us to protect communications and personal information in data analysis processes. The SISCOM research group has experience in anonymization of medical databases, protection of user privacy in Web browsing, electronic voting, communication in wireless networks with/without infrastructure (vehicular networks, mesh networks, mobile ad hoc networks), design of efficient routing protocols for wireless infrastructureless networks, personal networks, machine learning algorithms designed for autonomous vehicles and routing protocols.

Mónica has more than 130 publications, among which 13 Q1, 15 Q2 and 7 Q1/Q2 as Guest Editor. She is co-author of 3 book chapters about vehicular networks. She has tutored 6 PhD thesis and has co-tutored 4 PhD thesis. Currently, she supervises 4 PhD thesis.

She is a member of the Editorial Board of the Elsevier's Ad Hoc Networks journal, of the ITU Journal on Future and Evolving Technologies (ITU J-FET), and of the ACM Computing Surveys. She has served as Guest Editor for several Special Issues: five times for the Elsevier's Ad Hoc Networks journal, once for the IEEE Transactions on Intelligent Transportation Systems journal, and once for the Elsevier's Computer Networks journal. She has served as General Chair or Co-chair in several editions of international conferences (MSWIM, PEWASUN, ISCC, CCNC). She has served as a member of the Technical Program Committee in more than 70 international conferences.

She has led 5 Spanish projects funded by the National Research Plan of the Spanish *Ministerio de Economía y Competitividad*. She has been involved in several other public funded national research projects in the field of multimedia communications. Currently, she is the principal investigator of the Spanish MultiMO (Datos MultiSectoriales para la Movilidad Obligada, TSI-100123-2024-0060) project, and of the MobilitApp (<http://mobilitat.upc.edu>) project. She currently leads 2 collaboration projects with public entities: (i) the Sistema d'Emergències Mèdiques (SEM) de Barcelona; and with (ii) the Autoritat del Transport Metropolità (ATM) de Barcelona.

She participated in the company contract ANEM (Models i tècniques d'ANonimització de dadEs en el context de la Mobilitat sostenible) lead by Prof. Jordi Forné Muñoz (UPC), and Mr. Stefano Persi (Mosaic Factor). Now she participates in the company contract MobiCugat with the company Houndline for the municipality of Sant Cugat in Barcelona, about the analysis of urban mobility using SUMO.

She participated in 2 European Research projects: (i) Enhancing critical infrastructure protection with innovative security framework (CIPSEC), HORIZON 2020 Digital Security: cybersecurity, privacy and trust (H2020-700378-CIPSEC). 2016 – 2019; and (ii) [4I4U EIT Urban Mobility](#) (2022): Citizen, Teaching, Industry, Cities for Future Mobility. [4I4U Project](#) HORIZON EUROPE 2021-2027. European Institute of Innovation and Technology (EIT) Urban Mobility. KIC URBAN MOBILITY. EIT-UM-2022-22016-4I4U, which she led in the last quarter of 2022.

She was a member of the Spanish Research Network [EVEREST](#) (Metodologías avanzadas de evaluación de prestaciones y QoS en redes y servicios telemáticos) funded by the Spanish *Ministerio de Ciencia e Innovación*.

Her research interests include design, analytical modelling, and design of multimetric routing protocols and multimedia services over vehicular networks. Her work deals with the design of QoS-aware services for vehicular networks, electric vehicle, autonomous vehicle, machine learning, sustainable mobility and privacy. Also, she currently works with machine learning techniques for vehicular networks including platooning and electric vehicles.

Part C. RELEVANT MERITS

C.1. Publications (last decade)

- 1 Alberto Bazán-Guillén, Carlos Beis-Penedo, Diego Cajaraville-Aboy, Pablo Barbecho-Bautista, Rebeca P. Díaz-Redondo, Luis J. de la Cruz Llopis, Ana Fernández-Vilas, Mónica Aguilar Igartua, Manuel Fernández-Veiga, "Realistic Urban Traffic Generator using Decentralized Federated Learning for the SUMO simulator", *IEEE Open Journal of the Communications Society*, ISSN: 2644-125X, August 2025, (IF 2024 = 6.1; 23/120; Telecommunications; Q1), DOI: [10.1109/OJCOMS.2025.3597019](#).
- 2 Yaqoob Al-Zuhairi, Prashanth Kannan, Alberto Bazán Guillén, Luis J. de la Cruz Llopis, Mónica Aguilar Igartua, "Efficient Charging Station Selection for Minimizing Total Travel Time of Electric Vehicles", *Future Internet*, ISSN: 2644-125X, August 2025, (IF 2024 = 3.6; 93/258; Computer Science, Information Systems; Q2), DOI: [10.3390/fi17080374](#).
- 3 Gerard Caravaca Ibáñez, Luis J. de la Cruz Llopis, Adrián Catalán Diaconeasa, Alberto Bazán Guillén, Mónica Aguilar Igartua, "MolibitApp: A Deep Learning-Based Tool for Transport Mode Detection to Support Sustainable Urban Mobility", *IEEE Access*, ISSN: 2169-3536, April 2025, (IF 2024 = 3.6; 50/120; Telecommunications; Q2), DOI: [10.1109/ACCESS.2025.3561238](#).
- 4 Antoni Mínguez, Volkan Tozan, Monica El-Assaad, Silvia Solà-Muñoz, Youcef Azeli, Luis J. de la Cruz Llopis, Xavier Jiménez-Fàbrega, Carles Galup, Raimon Dalmau, Mónica Aguilar Igartua, "Design of a SUMO-based simulator for optimal location of emergency vehicles in the Emergency Medical Systems", *Emergency Medicine International*, ISSN: 2090-2840, 4823481, pp. 1-26, February 2025, (IF 2024 = 0.8; 39/56; Emergency Medicine; Q3), DOI: [10.1155/emmi/4823481](#).
- 5 Isabel Martín Faus, Leticia Lemus Cárdenas, Ahmad Mohamad Mezher, **Mónica Aguilar Igartua**, "Markov-reward based estimation of the idle-time in vehicular networks to improve multimetric routing protocols", *Vehicular Communications*, ISSN: 2214-2096, Vol. 49, pp. 1-15, June **2024**, (IF 2023 = 5.8; 20/119; Telecommunications; Q1), DOI: [10.1016/j.vehcom.2024.100823](#).
- 6 Ahmad Mohamad Mezher, **Mónica Aguilar Igartua**, "G-3MRP: A game-theoretical multimedia multimetric map-aware routing protocol for vehicular ad hoc networks", *Computer Networks*, ISSN: 1389-1286, Vol. 213, pp. 1-17, August **2022**, (IF 2022 = 5.6; 23/88; Telecommunications; Q1), DOI: [10.1016/j.comnet.2022.109086](#)
- 7 Pablo Barbecho Bautista, Luis Urquiza Aguiar, **Mónica Aguilar Igartua**, "How does the traffic behavior change by using SUMO traffic generation tools", *Computer Communications*, ISSN: 0140-3664, Vol. 181, pp. 1-13, January **2022**, (IF 2022 = 6.0; 52/275; Engineering, Electrical & Electronic; Q1), DOI: [10.1016/j.comcom.2021.09.023](#).
- 8 Dustin Carrión-Ojeda, Cristhian Iza Paredes, **Mónica Aguilar Igartua**, "Performance Evaluation of Dissemination Protocols over vehicular networks for an Automatic Speed Fine System", *IEEE Access*, ISSN: 2169-3536, Vol. 9, pp. 103244-103257, July **2021**, (IF 2020 = 3.367; 76/316; Engineering, Electrical & Electronic; Q1), DOI: [10.1109/ACCESS.2021.3097908](#).
- 9 Leticia Lemus Cárdenas, Ahmad Mohamad Mezher, Pablo Barbecho Bautista, Juan Pablo Astudillo León,

Mónica Aguilar Igartua, "A multimetric predictive ANN-based routing protocol for vehicular ad hoc networks", *IEEE Access*, ISSN: 2169-3536, Vol. 9, pp. 1-17, June **2021**, (IF 2019 = 3.745, 35/156, Q1), DOI: [10.1109/ACCESS.2021.3088474](https://doi.org/10.1109/ACCESS.2021.3088474).

- 10** Efraín Palacios Jara, Ahmad Mohamad Mezher, **Mónica Aguilar Igartua**, Rebeca P. Díaz Redondo, Ana Fernández-Vilas, "QSMVM: QoS-Aware and Social-Aware Multimetric Routing Protocol for Video-Streaming Services over MANETs", *Sensors*, ISSN: 1424-8220, Vol. 21, Iss. 3, pp. 901-922, January **2021**, (IF 2019 = 3.275, 15/64, Q1), DOI: [10.3390/s21030901](https://doi.org/10.3390/s21030901).
- 11** Barbecho, P.; Urquiza, L.; Lemus, L.; **Aguilar Igartua, M.** **2020**. "Large-scale simulations manager tool for OMNeT++: expediting simulations and post-processing analysis", *IEEE access*, Vol. 8, pp. 159291-159306. ISSN 2169-3536. DOI: [10.1109/ACCESS.2020.3020745](https://doi.org/10.1109/ACCESS.2020.3020745).
- 12** **Aguilar Igartua, M.**; Almenares, Florina; Diaz, R.; Díaz, R., Martín, M. I., Forné, J., Campo C., Fernández Vilas, A., DE la Cruz, L.J, García-Rubio, C., Marín, A., Mezher, A.M., Díaz, D., Cerezo H., Rebollo-Monedero, D., Arias, P., Rico, F.. **2020**. "INRISCO: INcident monitoRing in Smart Communities", *IEEE access*, Vol. 8, pp. 72435-72460. ISSN 2169-3536. DOI: [10.1109/ACCESS.2020.2987483](https://doi.org/10.1109/ACCESS.2020.2987483)
- 13** Lemus, L.; Mezher, A.; Barbecho, P.; **Aguilar Igartua, M.** **2019**. "A probability-based multimetric routing protocol for vehicular ad hoc networks in urban scenarios", *IEEE access*, Vol. 7, Iss. 1, pp. 178020-178032. ISSN 2169-3536. DOI: [10.1109/ACCESS.2019.2958743](https://doi.org/10.1109/ACCESS.2019.2958743).
- 14** Barbecho, P.; Lemus, L.; Urquiza, L.; **Aguilar Igartua, M.** **2019**. "A traffic-aware electric vehicle charging management system for smart cities", *Elsevier Vehicular Communication*, Vol. 20, pp. 1-14, ISSN 2214-2096. DOI: [10.1016/j.vehcom.2019.100188](https://doi.org/10.1016/j.vehcom.2019.100188).
- 15** Martin, I.V.; Urquiza, L.; **Aguilar Igartua, M.**; Guérin-Lassous, I. **2018**. "Transient analysis of idle time in VANETs using Markov-reward models", *IEEE transactions on vehicular technology*, Vol. 67, Iss. 4, pp. 2833-2847. ISSN 0018-9545. DOI: [10.1109/TVT.2017.2766449](https://doi.org/10.1109/TVT.2017.2766449).
- 16** Iza, C.; Mezher, A.; **Aguilar Igartua, M.**; Forné, J. **2018**. "Game-theoretical design of an adaptive distributed dissemination protocol for VANETs", *Sensors*, Vol. 18, No 1. ISSN 1424-8220. DOI: [10.3390/s18010294](https://doi.org/10.3390/s18010294).
- 17** Mezher, A.; **Aguilar Igartua, M.** **2017**. "Multimedia multimetric map-aware routing protocol to send video-reporting messages over VANETs in smart cities", *IEEE transactions on vehicular technology*, Vol. 66, Iss. 12, pp. 10611-10625. ISSN 0018-9545. DOI: [10.1109/TVT.2017.2715719](https://doi.org/10.1109/TVT.2017.2715719).
- 18** Urquiza, L.; Tripp Barba, Carolina; **Aguilar Igartua, M.** **2016**. "A geographical heuristic routing protocol for VANETs", *Sensors*, Vol. 16, Iss. 10, pp. 1567-1595. ISSN 1424-8220. DOI: [10.3390/s16101567](https://doi.org/10.3390/s16101567).
- 19** Mezher, A.; **Aguilar Igartua, M.**; de la Cruz Llopis, Luis J.; Pallares, E.; Tripp Barba, Carolina; Urquiza, L.; Forne, J.; Sanvicente, E. **2015**. "A multi-user game-theoretical multipath routing protocol to send video-warning messages over mobile ad hoc networks", *Sensors*, Vol. 15, Iss. 4, pp. 9039-9077. ISSN 1424-8220. DOI: [10.3390/s150409039](https://doi.org/10.3390/s150409039)
- 20** Tripp, C.; Urquiza, L.; **Aguilar Igartua, M.**; Rebollo-Monedero, D.; de la Cruz Llopis, Luis J.; Mezher, A.; Aguilar-Calderón, J. A. **2014**. "A Multimetric, Map-Aware Routing Protocol for VANETs in Urban Areas", *Sensors*, Vol. 14, Iss. 2, pp. 2199-2224. ISSN 1424-8220. DOI: [10.3390/s140202199](https://doi.org/10.3390/s140202199).

C.2. Research projects

- 1** [MultiMO](#) (01July2025 - 31June2026): Datos MultiSectoriales para la Movilidad Obligada. TSI-100123-2024-0060. CTT code: K-00590. Proyectos Estratégicos Orientados a la Transición Ecológica y a la Transición Digital. Convocatoria 2024. Ministerio para la Transformación Digital y de la Función Pública. Plan de Recuperación, Transformación y Resiliencia-Next Generation EU (Programa Espacios de Datos Sectoriales). 562,735 euros, 13 members. Prof. Mónica Aguilar Igartua.
- 2** [DISCOVERY](#) (01/09/2024 - 31/12/2027): Distributed Smart Communications with Verifiable Energy-optimal Yields. Communication network protocols and data privacy. PID2023-148716OB-C32. CTT code: J-03270. Proyectos de Generación de Conocimiento 2023. Ministerio de Ciencia, Innovación y Universidades. [DISCOVERY](#). 168,750 euros, 12 members. Prof. Luis J. de la Cruz Llopis, Javier Parra Arnau.
- 3** [4I4U EIT Urban Mobility](#): Citizen, Teaching, Industry, Cities for Future Mobility. [4I4U Project](#) HORIZON EUROPE 2021-2027. European Institute of Innovation and Technology (EIT) Urban Mobility. KIC URBAN

- MOBILITY. EIT-UM-2022-22016-4I4U. 01/Jan/2022-31/Dec/2022. 25,625.00 euros, 6 members. PI: Elisa Sayrol (Jan-Sept) and **Mónica Aguilar Igartua** (Oct-Dec).
- 4 “Enhancing critical infrastructure protection with innovative security framework”. Commission of European Communities. H2020-700378-CIPSEC. PI: Jorge Forné Muñoz. (UPC). 01/May/2016 - 30/Apr/2019. 224,807.66€. 6 members.
 - 5 [MOBILYTICS](#) (01Dic2022 - 31May2025): Anonymization technology for AI-based analytics of mobility data. TED2021-129782B-I00. CTT code: J-03006. Proyectos Estratégicos Orientados a la Transición Ecológica y a la Transición Digital. Convocatoria 2021. Ministerio de Ciencia e Innovación. 01Dic2022 - 31May2025. 211,945 € euros, 12 members. PI1: **Mónica Aguilar Igartua**, PI2: Javier Parra Arnau.
 - 6 [COMPROMISE](#) (01Sep2021 - 28Feb2025): “Enhancing Communication Protocols with Machine Learning while Protecting Sensitive Data”, PID2020-113795RB-C31/AEI/10.13039/50110001103, Ministerio de Ciencia e Innovación, 01/Sep/2021-28/Feb/2025. 165,891 €. 12 members. PI1: **Mónica Aguilar Igartua**, PI2: Javier Parra Arnau.
 - 7 Red [EVEREST](#): “Metodologías avanzadas de evaluación de prestaciones y QoX en redes y servicios telemáticos”. RED2018-102383. Ministerio de Ciencia, Innovación y Universidades. PI: María Dolores Cano (UPCT). 01/Jan/2020 - 31/Dec/2021. 20,000 €. 10 members.
 - 8 [MAGOS](#): “Inteligencia de Fuentes Abiertas para Redes Eléctricas Inteligentes Seguras. Privacidad de Datos y Comunicaciones Fiables”. TEC2017-84197-C4-3-R. Ministerio de Economía y Competitividad. PI1: Jorge Forné, PI2: Luis Javier de la Cruz Llopis. (UPC). 01/Jan/2018 - 30/Sep/2021. 79,860 €. 11 members.
 - 9 [INRISCO](#): “INcident monitoRing In Smart COmmunities. QoS and Privacy”. TEC2014-54335-C4-1-R, Ministerio de Economía y Competitividad. PI1: **Mónica Aguilar Igartua**, PI2: Jorge Forné. (UPC). 01/Jan/2015 - 30/Jun/2019. 62,920 €. 10 members.
 - 10 “Information security group (ISG)”. 2014 SGR 1504. Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR). PI: Miguel Soriano Ibáñez. (UPC). 01/Jan/2014 - 30/Apr/2017. 28,823.31 €. 12 members.
 - 11 “Respuesta a Emergencias en Comunidades Inteligentes. Ámbito internacional (EMRISCO++)”. EUIN2013-51185. Acciones de Dinamización Europa Investigación Ministerio de Economía y Competitividad. PI: **Mónica Aguilar Igartua**. 01/Mar/2014 - 30/Jun/2016. 18,000 €. 10 members.

C.3. Contracts, technological or transfer merits

- 1 Contract UPC - HoundLine - Sant Cugat City Hall (01/09/2025 - 31/12/2025). “Estudi de mobilitat urbana per l'Ajuntament de Sant Cugat (MobiCugat)”. 4,500 euros. 9 members. Joaquim Montal (HoundLine), **Mónica Aguilar Igartua** (UPC), Albert Muret (Sant Cugat).
- 2 “SEM-UPC (25/Nov/2020 – 25/Nov/2023). Collaboration for the improvement of the medical emergency system. Project A-01325. Joint research project to improve the management of the location of the bases of the vehicles of the Sistema d’Emergències Mèdiques (SEM) de Catalunya. 5 members. PI: **Mónica Aguilar Igartua** (UPC).
- 3 ATM-UPC (02/07/2021-02/07/2024): Cooperation between the "Autoritat del Transport Metropolità (ATM)" and the UPC to collaborate in several research projects. Project A-01358. Prediction of the transportation mode used by the citizens from the analysis of smart phone sensors, while ensuring privacy. 5 members. PIs: **Mónica Aguilar Igartua** (UPC) and Mr. Francesc Calvet (ATM).
- 4 Contract UPC - Mosaic Factor S.L. (01/06/2021-30/11/2022). Project title: “Models i tècniques d’ANonimització de dadEs en el context de la Mobilitat sostenible (ANEM)”. 30,000 euros. 4 members. PIs: Jordi Forné Muñoz (UPC), and Mr. Stefano Persi (Mosaic Factor).

C.4. Awards

- 1 Recipient of the 2025 Mirela Notare Award, given in the MSWiM conference. http://mswimconf.com/2025/mirela_award.html