Curriculum Vitae

ANDRÉ PRAGOSA CLÉRIGO

Detailed academic curriculum vitae

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July 24, 2026

Contents

1. Identification / Contacts

Full name: André Pragosa Clérigo
Citation name: Clérigo, André

Date and place of birth: 14th of June 2001, in Leiria, Portugal

Author identifiers

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- Google Scholar: dZcI2_8AAAAJ
- GitHub: https://github.com/andreclerigo
- LinkedIn: https://www.linkedin.com/in/andreclerigo
- ResearchGate: https://www.researchgate.net/profile/Andre-Clerigo

2. Synopsis

André Pragosa Clérigo is a Ph.D. student in Computer Science in the MAP-i doctoral programme at the University of Aveiro and a researcher at Instituto de Telecomunicações. His work focuses on Intelligent Transport Systems applications for vulnerable road users, combining mixed reality, Vehicle-to-Everything communications, cooperative perception, and edge-assisted services in realistic smart-city environments.

His research trajectory began during the B.Sc. in Computer and Informatics Engineering and continued through the M.Sc. in Computer Engineering and Telematics at the University of Aveiro, where his dissertation investigated the integration of communication, sensing, and augmented reality towards road safety. This work received the IEEE Portugal Outstanding MSc Thesis Award and led to publications in automotive user interfaces, vehicular networking, and network/service management venues.

In the current Ph.D. work, André studies communication frameworks and interaction mechanisms for road-safety applications involving vulnerable road users, connected vehicles, and autonomous mobility platforms. The research combines system implementation, mixed-reality interfaces, V2X message exchange, mobile/edge computing, and human-centred evaluation. The work is connected to large-scale experimental infrastructures and projects at Instituto de Telecomunicações, including Aveiro Tech City Living Lab activities and European and national projects such as 6G-PATH, Route 25, and SafeXCity.

3. Education

2024 – present	**Ph.D. in Informatics (MAP-i)** Universities of Aveiro, Porto, and Minho, Portugal Dissertation: “Network Architectures and Communication Frameworks for VRU Safety in Smart Environments” Ph.D. pre-thesis presentation: **20**/**20**.
2025/11 – 2026/01	**CMU Portugal Visiting Students Program 2025** Carnegie Mellon University, United States
2022 – 2024	**M.Sc. in Computer Engineering and Telematics** Universidade de Aveiro, Portugal Final grade: **19**/**20** Dissertation: “On the integration of communication, sensing and AR towards road safety”
2019 – 2022	**B.Sc. in Computer and Informatics Engineering** Universidade de Aveiro, Portugal Final grade: **15**/**20**

4. Industry

Current industry-facing activities are connected primarily to applied research projects and collaborations in intelligent mobility, smart-city infrastructures, and wearable/XR interfaces. These are detailed in the scientific-projects, knowledge-transfer, and dissemination sections below.

5. Scientific Capacity

5.1. Research positions

2024/09 – Present **Research Fellow / Researcher**
Instituto de Telecomunicações, Aveiro, Portugal
Project: *6G-PATH: 6G Pilots and Trials Through Europe*.

2025/05 – 2026/01 **Research Fellow**
Instituto de Telecomunicações, Aveiro, Portugal
Project: *SafeXCity: Augmented Safety for Urban Mobility*.

2024/01 – 2024/09 **Research Fellow**
Instituto de Telecomunicações, Aveiro, Portugal
Project: *Route 25: Agenda for Autonomous, Intelligent, Interoperable and Inclusive Mobility*.

2023/01 – 2023/06 **Undergraduate Research Fellow**
Instituto de Telecomunicações, Aveiro, Portugal
Project: *POWER – Empowering a Digital Future*.

2022/01 – 2023/01 **Undergraduate Research Fellow**
Instituto de Telecomunicações, Aveiro, Portugal
Project: *RES-JNMatos*.

2021/10 – 2021/11 **Undergraduate Research Fellow**
Instituto de Telecomunicações, Aveiro, Portugal
Project: *Verão com Ciência 2021*.

5.2. Scientific Production

5.2.1. Citations Info

- Google Scholar profile: Google Scholar: dZcI2_8AAAAJ
- ORCID iD: 0009-0006-5712-2377
- **[TODO: Update citation count, h-index, and document count before submission.]**

5.2.2. Journal articles and manuscripts under review

1. **A. Clérigo**, M. Schrapel, P. Rito, S. Sargento, and A. Vinel. "Evaluating Strategies for Multimodal Bidirectional Interactions between Pedestrians and AVs." *Proceedings of the ACM*

on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), 2026. Submitted.

2. **A. Clérigo**, P. Rito, S. Sargento, and P. Steenkiste. "New Congestion Mitigation Strategies for a V2X Mobile Collective Perception Service." *IEEE Transactions on Vehicular Technology*, 2026. Submitted.

3. G. Silva, **A. Clérigo**, P. Rito, and S. Sargento. "Multimodal AR-based Sensing and V2X Framework for Vulnerable Road Users Safety." *IEEE Transactions on Vehicular Technology*, Special Issue on Advanced Driving Intelligence for Autonomous Vehicles, 2026. Submitted.

4. B. Marques, S. Silva, S. Oliveira, **A. Clérigo**, J. Ramos, D. Mendes, and R. Rodrigues. "Expanding eXtended Reality Education: A Multimodal Human-Machine Interaction Course for Doctoral Students in Computer Science." *Computers & Graphics*, 2026. Submitted.

5. **A. Clérigo**, P. Rito, and S. Sargento. "Collision Prediction and Detection for Automotive Applications using V2X and Data Fusion." *IEEE Transactions on Intelligent Transportation Systems*, Special Issue on Automated Driving in Mixed Traffic: From Sensing to Planning and Control, 2026. Submitted.

5.2.3. Conference papers

1. **A. Clérigo**, G. Silva, T. Marques, J. Gameiro, P. Valente, J. Gonçalves, R. Gonçalves, D. Abreu, M. Luís, P. Rito, S. Sargento, S. Figueiredo, and D. Raposo. "SafeXCity: Deployable Edge Orchestration for VRU–AV Interactions over 5G." *Proc. EAI Wireless Internet Conference (WiCON)*, 2026. Submitted.

2. **A. Clérigo**, G. Silva, M. Schrapel, P. Rito, S. Sargento, and A. Vinel. "Cooperative Augmented Reality: Displaying Occluded Vehicles using V2X Communications." *Proc. IEEE VNC*, 2025. DOI: 10.1109/VNC64509.2025.11054191.

3. G. Silva, **A. Clérigo**, P. Rito, and S. Sargento. "Demo: Integrating AR Headsets with Mobile Object Detection to Extend Road Sensing and VRU Safety." *Proc. IEEE VNC*, 2025. DOI: 10.1109/VNC64509.2025.11054108.

4. **A. Clérigo**, M. Schrapel, P. Rito, S. Sargento, and A. Vinel. "Microservice-Based Architecture for Enhancing Road Safety with Support for Low-Latency Services." *Proc. IEEE/IFIP NOMS*, 2025. DOI: 10.1109/NOMS57970.2025.11073709.

5. R. Rodriguez, **A. Clérigo**, P. Rito, S. Sargento, B. Parreira, and R. Dinis. "MEC Federation: A Framework for Resource Sharing in Multi-Operator Beyond-5G Networks." *Proc. IEEE/IFIP NOMS*, 2025. DOI: 10.1109/NOMS57970.2025.11073615.

6. **A. Clérigo**. "Doctoral Symposium: Exploring Emerging Intelligent Transport System Applications Focused on Vulnerable Road Users." *Proc. IEEE/IFIP NOMS*, 2025. DOI: 10.1109/NOMS57970.2025.11073651.

7. **A. Clérigo**, M. Schrapel, P. Rito, S. Sargento, and A. Vinel. "SafeARCross: Augmented Reality Collision Warnings and Virtual Traffic Lights for Pedestrian Safety." *Proc. ACM AutomotiveUI*, 2024. DOI: 10.1145/3640792.3675734.

5.2.4. Science communication and outreach publications

1. **Science communication (forthcoming):** A. Figueiredo, J. Amaral, **A. Clérigo**, J. Ramos, M. Filho, T. Pereira, G. Silva, P. Fernandes, P. Rito, D. Raposo, S. Sargento, and M. Luís. "Communication Networks for Improved Road Safety with Autonomous Vehicles." *research@ua*, vol. 16, forthcoming. Online URL and page range pending.

5.2.5. Theses

1. **A. Clérigo**, "On the integration of communication, sensing and AR towards road safety," M.Sc. dissertation, Universidade de Aveiro, 2024.

2. **A. Clérigo**, "Network Architectures and Communication Frameworks for VRU Safety in Smart Environments," Ph.D. dissertation, MAP-i Doctoral Programme, ongoing.

5.3. Participation in Scientific Projects

5.3.1. Ongoing Projects

2024 – present 6G-PATH: 6G Pilots and Trials Through Europe

Funding entity: European Union Horizon Europe programme / Smart Networks and Services Joint Undertaking; Grant Agreement No. 101139172

Role: Research Fellow / Researcher

Summary: 6G-PATH conducts large-scale 5G/6G trials across health, education, smart-city, and farming verticals, evaluating both Key Performance Indicators and Key Value Indicators.

Contribution: Contribution to smart-city and mobility use cases involving communication services, edge-assisted applications, V2X-enabled safety mechanisms, and real-world experimental infrastructures.

5.3.2. Completed Projects

2025 – 2026 SafeXCity: Augmented Safety for Urban Mobility

Funding entity: European Union Horizon Europe programme through FIDAL Open Call 2; parent Grant Agreement No. 101096146

Role: Research Fellow

Summary: SafeXCity investigated Beyond-5G, XR, V2X, connected-vehicle, and mobility-sensor technologies for improving the safety of pedestrians and cyclists in urban environments.

Contribution: Designed, implemented, and evaluated an XR- and V2X-enabled bidirectional VRU–AV interaction loop combining AR feedback, voice commands, edge-assisted speech recognition, and 5G connectivity; contributed to real outdoor user trials and smart-city deployment with mobile-network operators.

2024 Route 25: Agenda for Autonomous, Intelligent, Interoperable and Inclusive Mobility

Funding entity: Recovery and Resilience Plan (PRR)/NextGenerationEU, managed by IAPMEI; operation code 01/C05-i11/2024.PC645463824-00000063

Role: Research Fellow

Summary: Route 25 developed autonomous, intelligent, interoperable, and inclusive mobility technologies through large-scale national research and demonstration activities.

Contribution: Contribution to cooperative perception, V2X-enabled interaction between road users and vehicles, augmented-reality safety applications, and autonomous-mobility demonstrations.

2023 POWER – Empowering a Digital Future

Funding entity: European Regional Development Fund (FEDER) through COMPETE 2020/Portugal 2020; reference POCI-01-0247-FEDER-182851

Role: Undergraduate Research Fellow

Summary: POWER developed an innovative portfolio of products and services around 5G networks, edge/cloud computing, data-driven technologies, and artificial intelligence.

Contribution: Contribution to research activities involving smart-city services, communication-network architectures, edge/cloud systems, and data-driven communication services.

2022 – 2023 RES-JNMatos

Funding entity: Instituto de Telecomunicações project reference O-0030-AV-17

Role: Undergraduate Research Fellow

Summary: Institutional research activities in wireless technologies.

Contribution: Participated in undergraduate research and technical-development activities within Instituto de Telecomunicações.

2021 Verão com Ciência 2021

Funding entity: Fundação para a Ciência e a Tecnologia (FCT); scholarship reference BII Nº 2021/00169

Role: Undergraduate Research Fellow

Summary: FCT programme supporting initiation into scientific research through short-term research scholarships in Portuguese R&D units.

Contribution: Participated in a short-term undergraduate research project at Instituto de Telecomunicações.

5.4. Intervention in the Scientific Community

5.4.1. Evaluation and Review of Scientific Articles

Journal articles:

- IEEE Internet of Things Journal, 2026.
- IEEE Journal of Selected Areas in Sensors, 2026.

Conference papers:

- IEEE Vehicular Networking Conference, 2025 and 2026.
- IEEE Vehicular Technology Conference, 2025.

5.4.2. Scientific External Collaborations

- **Karlsruher Institut für Technologie (KIT), Germany.** Collaboration on V2X, VRU safety, and AR-based road-safety applications, including work with Prof. Alexey Vinel and Maximilian Schrapel.
- **Carnegie Mellon University, United States.** Visiting Students Program 2025, with activities connected to network systems and edge-assisted mobility applications.
- **Brilliant Wear, United States.** Applied collaboration around wearable/XR devices and low-power multimodal interaction for road-safety use cases.

5.4.3. Talks and Presentations

- **2026/07/17 — Research Summit 2026, University of Aveiro.** Presented the Ph.D. research pitch "Human and Network Architectures and Communication Frameworks for VRU Safety in Smart Environments" in the IT Communication Networks session.
- **2026/04/10 — Jornadas IT 2026, Polytechnic Institute of Leiria.** Presented Ph.D. research developed within the Networks and Services thematic line of Instituto de Telecomunicações.
- **2026/02/18 — Human Factors in Autonomous Driving, Karlsruher Institut für Technologie, Germany.** Delivered an invited lecture on human factors and interaction design for autonomous-driving systems.
- **2024/07/19 — 36th Seminar RTCM.** Presented the M.Sc. thesis work "On the integration of communication, sensing and AR towards road safety".

5.4.4. Demonstrations and Scientific Dissemination

- **2026/07/01 — Route 25 Aveiro Demonstration, Instituto de Telecomunicações, Aveiro.** Contributed to the integration and presentation of technical demonstrations involving sensor perception and fusion, digital twins, the Aveiro Tech City Living Lab, Time-Sensitive Networking, private 5G networks, remote driving, V2X communications, and intelligent traffic-signal priority.
- **2026/06/25 — 3rd Encontro das Agendas Mobilizadoras do PRR, Europarque, Santa Maria da Feira.** Presented research results and demonstrations developed within national mobilising agendas addressing autonomous mobility, connected vehicles, vulnerable-road-user safety, and intelligent transportation systems.
- **2026/06/17–18 — Final AM2R Event, Centro de Artes de Águeda.** Presented connected-mobility and cyclist-safety research results associated with communication, sensing, and intelligent bicycle technologies.
- **2026/06/02–05 — EuCNC & 6G Summit 2026, Málaga, Spain.** Demonstrated the SafeX-City framework for XR- and V2X-enabled interaction between vulnerable road users and automated vehicles, integrating augmented-reality feedback, edge-assisted voice interaction, 5G connectivity, and real-world urban-mobility experimentation.

- **2026/05/12–14 — Portugal Smart Cities Summit 2026, Lisbon.** Presented live demonstrations involving mobile object detection with smart glasses, interaction mechanisms between vulnerable road users and connected and automated vehicles, V2X communications, and smart-city mobility infrastructure.
- **2025/10/29 — Automotive Summit 2025, Aveiro.** Participated in the presentation and dissemination of research on autonomous mobility, intelligent transportation systems, V2X communications, and connected urban infrastructure.
- **2025/09/17 — Route 25 Aveiro Demo Day, Parque de Exposições de Aveiro.** Contributed to large-scale demonstrations in a real urban environment involving cooperative perception, interaction with pedestrians and cyclists, augmented-reality visualisation, autonomous vehicles, 5G connectivity, and edge computing.
- **2025/06/02–04 — 16th IEEE Vehicular Networking Conference, Porto.** Co-presented demonstrations involving AR headsets, mobile object detection, V2X communications, and vulnerable-road-user safety, and served as a Student Volunteer.

5.4.5. Distinctions

- Caixa Geral de Depósitos Scholarship, 2024 and 2025.
- IEEE/IFIP NOMS 2025 Student Travel Grant.
- IEEE Portugal Outstanding MSc Thesis Award, 2024.
- 4th place in EBEC Challenge Iberia, 2023.
- 1st place in EBEC Challenge Aveiro, 2023.

5.5. Constitution of research teams and orientation of academic work of post-doctoral and doctoral students

5.5.1. Post-doctoral Co-supervision

[TODO: Not applicable yet, or add entries if applicable.]

5.5.2. PhD Theses Supervision / Scientific Collaboration

[TODO: Not applicable yet, or add Ph.D. student collaboration/supervision entries if applicable.]

6. Pedagogic Capacity

6.1. Teaching and Student Supervision

2026/01 – 2026/07 **Projecto em Engenharia de Computadores e Informática**
B.Sc. class, Universidade de Aveiro
Role: Student project supervision.

2026/03 **Redes e Sistemas Autónomos**
M.Sc. class, Universidade de Aveiro
Role: Teaching/support activity.

6.2. MSc Students Supervision

[TODO: Add MSc student supervision entries when applicable.]

7. Knowledge Transfer

7.1. Consulting services, tests and measurements

[TODO: Add consulting services, technical tests, measurements, or industry-support activities if applicable.]

7.2. Dissemination of science and technology

Open-source projects and software activities

- GitHub profile: public software projects and research prototypes connected to AR, road safety, networked systems, and developer tools.
- SafeARCross: AR application designed to improve awareness in pedestrian-crossing scenarios using collision-warning and virtual-traffic-light concepts.

8. University Management

8.1. Participation in scientific, pedagogical or institutional management activities

- Interim Chair, IEEE Student Branch Joint Chapter Communications Society and Vehicular Technology Society – University of Aveiro, 2026/03 – Present.
- Advisor, University of Aveiro Rocketry Team, 2024/07 – Present.
- Treasurer, Núcleo Audiovisual Associativo, 2023/01/01 – Present.
- Treasurer, Clube Social e Cultural das Brancas, 2021/06/01 – Present.
- Payload Coordinator, University of Aveiro Rocketry Team, 2024/01/01 – 2024/07/01.

8.2. Participation in academic juries outside his own institution

[TODO: Add academic jury participation if applicable.]