

Curriculum Vitae

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Education

- *PhD Information Science and Technology*, University of Coimbra, Portugal. 2021.
- *M.Sc. Informatics Engineering (Equivalences)*, University of Coimbra, Portugal. 2016.
- *B.Sc. Informatics Engineering (Equivalences)*, University of Coimbra, Portugal. 2016.
- *M.Sc. Computer Science*, Central University of Venezuela, Venezuela. 2013.
- *B.Sc. Computer Science*, Central University of Venezuela, Venezuela. 2005.

Work record

- Assistant Professor (2023 -). University of Coimbra. Department of Informatics Engineering.
- Invited Assistant Professor (2021 - 2023). University of Coimbra. Department of Informatics Engineering.
- Junior Researcher (2014 - 2021). Centre for Informatics and Systems of the University of Coimbra.
- Assistant Professor (2014 - 2014). Central University of Venezuela. School of Computer Science.
- Lecturer (2009 - 2014). Central University of Venezuela. School of Computer Science.
- Invited Lecturer (2005 - 2009). Central University of Venezuela. School of Computer Science.

Research interests

- Network management, orchestration, Cloud-to-Things continuum.
- Quality of Service, latency, energy efficiency.
- Internet of Things, smart devices.
- Cognitive networking.
- Network simulation.

Scientific and professional profile and career

I worked at the School of Computer Science of the Central University of Venezuela, Venezuela, as a Lecturer from 2005 to 2013 and as Assistant Professor from 2013 to 2014. I have been working at the Department of Informatics Engineering of the University of Coimbra, Portugal, as an Assistant Professor since 2021. I have been a member of the Networks, Communications, and Security (NCS) of the Center for Informatics and Systems of UC (CISUC) since 2014 (first as an integrated PhD student and currently as a Full Member). I have successfully supervised four (4) MSc students, and I am currently supervising three (3) more, as well as one (1) PhD student.

I am an Associate Editor for the IEEE Internet of Things journal, and an Assistant Editor for the Elsevier Internet of Things journal. I have participated as TPC co-chair for the FlexNGIA 2023 Workshop, co-located with NOMS 2023; I was registration chair of CODASPY 2024; I was co-chair of the Computer Network technical track for ACM SIGAPP SAC 2025; I am Tutorial co-chair for IEEE WF-IoT 2025, and Local co-chair for ACM SIGCOMM 2025. I have participated as a TPC member of international conferences, including IEEE LCN, IEEE WoWMoM, IFIP WMNC, IEEE ISCC, IEEE WiMob, IEEE DRCN, DML-ICC (co-located with IEEE UCC), and ACM LANC.

I participated in several national and internationally funded research projects (see list below). I have published over 30 papers in international conferences and journals, gathering over 700 citations (according to Google Scholar). I actively participate as a reviewer of high-impact scientific venues, including journals like Elsevier Computer Networks, Elsevier Computer Communications, Elsevier Future Generation Computer Systems, and IEEE Transactions on Parallel and Distributed Systems. I participated as an evaluator for the European Commission for the call HORIZON-MSCA-DN-2024.

Most significant publications

- **Velásquez, K.**, Perez Abreu, D., Neves, P., Santos, M., Santiago, F., Lourenço, N., Curado, M., Monteiro, E., Amaro, C. “Cognitive customer profiling at the edge: Challenges and research directions.” Journal on Future and Evolving Technologies. ITU. 2024.
- Godinho, N., Duarte, P., Martins, P., Perez Abreu, D., Barbosa, R., Mendes, B., Fonseca, J., Silva, M., Araújo, M., Silva, J., **Velásquez, K.**, Sousa, B., Curado, M., and Goes, A. “OREOS: Demonstrating E2E Orchestration in 5G Networks with Open-Source Components.” IEEE INFOCOM Conference on Computer Communications Workshops (INFOCOM WKSHPS). IEEE. 2023.
- **Velasquez, K.**, Perez Abreu, D., Curado, M., and Monteiro, E. “Resource orchestration in 5G and beyond: Challenges and opportunities.” Computer Communications. Elsevier. 2022.
- **Velasquez, K.**, Perez Abreu, D., Curado, M., and Monteiro, E. “Service Placement for Latency Reduction in the Fog using Application Profiles.” IEEE Access. IEEE. 2021.
- **Velasquez, K.**, Perez Abreu, D., Paquete, L., Curado, M., and Monteiro, E. “A Rank-based Mechanism for Service Placement in the Fog.” IFIP Networking Conference. 2020.
- Perez Abreu, D., **Velasquez, K.**, Curado, M., and Monteiro, E. “A Comparative Analysis of Simulators for the Cloud to Fog Continuum.” Simulation Modelling Practice and Theory. Elsevier. 2019.

- **Velasquez, K.**, Perez Abreu, D., Assis, M. R. M., Senna, C. Bittencourt, L., Laranjeiro, N., Curado, M., Vieira, M., Monteiro, E., and Madeira, E. “Fog orchestration for the Internet of Everything: State-of-the-Art and Research Challenges.” *Journal of Internet Services and Applications*. Springer. 2018.
- **Velasquez, K.**, Perez Abreu, D., Curado, M., and Monteiro, E. “Service Placement for Latency Reduction in the Internet of Things.” *Annals of Telecommunications*. Springer. 2017.

Participation in research projects

- Orchestration and Resource optimization for rEliable and lOW-latency Services (OREOS), P2020 - Business R&D. Responsible for requirement analysis, technical specification of platform components, and proposal and validation of smart mechanisms for intelligent monitoring.
- Mobile Energy Efficiency Services (GreenStamp), P2020 - Business R&D. Research in offloading impact on energy consumption and categorization of applications for offloading.
- Promoting Sustainability as a Fundamental Driver in Software Development Training and Education (Sustainable), ERASMUS+. Collaboration in the organization of the Summer School held in Coimbra during the summer of 2023.
- Empowering a digital future (POWER), P2020 - Business R&D. Participation in the theoretical and practical analysis of Continuous Integration and Continuous Delivery/Deployment (CI/CD) and multi-cloud tools for the pilot; review of Machine Learning (ML) techniques for service migration in the Edge.
- Supporting the Orchestration of Resilient and Trustworthy Fog Service (SORTS), FCT/CAPES. Participated in the design of an orchestrator architecture to support the Internet of Everything (IoE) and orchestration mechanisms for the Cloud-to-IoT continuum. Design and instantiation of the testbed used to validate the orchestration mechanisms using simulation.
- Urban data-driven models for creative and resourceful urban transitions (SusCity), FCT - MIT - PT. Participated in the proposal of a technological stack able to gather real-time environmental data to support Smart City services; development of a web-based dashboard able to report real-time and historical data in Smart City environments.