

context aware with certain facilities and guarantees of success.

REFERENCES

- [1] A. K. Dey, 'Understanding and Using Context', *Pers. Ubiquitous Comput.*, vol. 5, no. 1, pp. 4–7, Jan. 2001, doi: 10.1007/s007790170019.
<https://doi.org/10.1007/s007790170019>
- [2] G. D. Abowd, A. K. Dey, P. J. Brown, N. Davies, M. Smith, and P. Steggle, 'Towards a Better Understanding of Context and Context-Awareness', presented at the 1st International Symposium on Handheld and Ubiquitous Computing, Karlsruhe, Germany, 1999, pp. 304–307. doi: 10.1007/3-540-48157-5_29.
https://doi.org/10.1007/3-540-48157-5_29
- [3] M. Papazoglou, 'Service-oriented computing: concepts, characteristics and directions', in *Web Information Systems Engineering*, Jul. 2012, pp. 3–12. doi: 10.1109/WISE.2003.1254461.
https://doi.org/10.1007/3-540-48157-5_29
- [4] D. C. Luckham, *Event processing for business: organizing the real-time enterprise*. Hoboken, N.J, USA: John Wiley & Sons, 2012.
<https://doi.org/10.1002/9781119198697>
- [5] A. Garcia-de-Prado, G. Ortiz, and J. Boubeta-Puig, 'CARED-SOA: A Context-Aware Event-Driven Service-Oriented Architecture', *IEEE Access*, vol. 5, pp. 4646–4663, 2017, doi: 10.1109/ACCESS.2017.2679338.
<https://doi.org/10.1109/ACCESS.2017.2679338>
- [6] A. Garcia-de-Prado, G. Ortiz, and J. Boubeta-Puig, 'COLLECT: COLlaborativE ConText-aware service oriented architecture for intelligent decision-making in the Internet of Things', *Expert Syst. Appl.*, vol. 85, pp. 231–248, Nov. 2017, doi: 10.1016/j.eswa.2017.05.034.
<https://doi.org/10.1016/j.eswa.2017.05.034>
- [7] Cairo University, M. Elkady, A. ElKorany, Cairo University, A. Allam, and Cairo University, 'ACAIOT: A Framework for Adaptable Context-Aware IoT applications', *Int. J. Intell. Eng. Syst.*, vol. 13, no. 4, pp. 271–282, Aug. 2020, doi: 10.22266/ijies2020.0831.24.
<https://doi.org/10.22266/ijies2020.0831.24>
- [8] P. Pradeep, S. Krishnamoorthy, R. K. Pathinarupothi, and A. V. Vasilakos, 'Leveraging context-awareness for Internet of Things ecosystem: Representation, organization, and management of context', *Comput. Commun.*, vol. 177, pp. 33–50, Sep. 2021, doi: 10.1016/j.comcom.2021.06.004.
<https://doi.org/10.1016/j.comcom.2021.06.004>
- [9] A. Ghannem, M. S. Hamdi, W. Abdelmoez, and H. H. Ammar, 'A context model development process for smart city operations', in *2015 IEEE International Conference on Service Operations And Logistics, And Informatics (SOLI)*, Yasmine Hammamet, Tunisia, Nov. 2015, pp. 122–127. doi: 10.1109/SOLI.2015.7367605.
<https://doi.org/10.1109/SOLI.2015.7367605>
- [10] L. Otero-Cerdeira, F. Rodríguez-Martínez, and A. Gómez-Rodríguez, 'Definition of an Ontology Matching Algorithm for Context Integration in Smart Cities', *Sensors*, vol. 14, no. 12, pp. 23581–23619, Dec. 2014, doi: 10.3390/s141223581.
<https://doi.org/10.3390/s141223581>
- [11] Y. Li and L. Xiao, 'Research on public health crisis early warning system based on context awareness', *Technol. Health Care*, vol. 30, pp. 303–314, Feb. 2022, doi: 10.3233/THC-THC228029.
<https://doi.org/10.3233/THC-THC228029>



Alfonso García-de-Prado was born in Madrid, Spain in 1972. He received a Ph.D. degree in Computer Science and Engineering from the University of Cadiz, Puerto Real, Spain, in 2017.

For several years, he has been a Programmer, an Analyst and a Consultant for various international industry partners. Since 2011, he has been an assistant professor at the University of Cadiz, Spain. His research focuses on trending topics, such as the CEP integration in service-oriented architectures and

context awareness in the IoT.



Guadalupe Ortiz was born in Madrid, Spain in 1977. She obtained a Ph.D. degree in Computer Science from the University of Extremadura, Cáceres, Spain, in 2007.

She was as Assistant Professor at the University of Extremadura, Spain, since 2001. In 2009, she joined the University of Cadiz, Spain, as Professor in Computer Science and Engineering. She has published over 100 peer-reviewed papers in international journals, workshops and conferences.

Her research interests embrace service context-awareness and their adaptation to mobile devices, as well as the integration of CEP in service-oriented architectures in the scope of the IoT and smart cities.