Part A. PERSONAL INFORMATION

CV date	2022-05-11

First name	Juan Antonio		
Family name	Álvarez García		

(*) Mandatory

A.1. Current position

Position	Associate Professor (Prof. Titular Universidad)		
Initial date	2018-10-31		
Institution	University of Seville		
Department/Center	Lenguajes y Sistemas Informáticos/ETS Ingeniería Informática		
Country	Spain		
Key words	Ubiquitous computing, mobile and wearable computing, activity recognition, deep learning, computer vision		

A.2. Previous positions (research activity interuptions, art. 14.2.b))

Period	Position/Institution/Country/Interruption cause
2011-2018	Contratado Doctor/University of Seville/Spain
2006-2011	Profesor Colaborador/University of Seville/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Computer Science Engineer	Universidad de Sevilla	2003
PhD in Computer Science	Universidad de Sevilla	2010

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

He defended his PhD in 2010 (Cum Laude unanimously). He got the Lecturer (Contratado doctor) position in 2011 and Associate Professor (Titular) in 2018. He has 2 national six-year research period and 1 transfer period, 6 lecturer trienniums (2003-2021) and 3 quinquennia (2003-2018). He belongs to the research group TIC134 (Sistemas Informáticos).

From 2003 he has been involved in research tasks and technology transfer. His research focuses on human activity, mobility and behaviour recognition and prediction using machine and deep learning techniques, gathering data with wearable sensors and/or cameras.

He is author of more than 50 publications in international journals and congress, 2 patents and 2 registered software applications. In 2012 and 2013 he was chosen as Chair of Technical Committee of the international contest EvAAL for the track "Activity Recognition for AAL", being this contest part of the European project FP7 UniversAAL (Project ID: 247950) where teams from leading Universities from the USA, EU and Japan took part in. He also was chosen as an

expert on the technical committee of the competition Pedestrian Dead-Reckoning Challenge part of Ubicomp in 2015. He has participated in more than 20 public or privately funded R&D projects, being the director of 13 of them and he has also been a reviewer of several impact factor journals and international conferences.

From 2015 to 2022 he was software and product design mentor at Andalucía Open Future, a Spanish start-up accelerator established by Telefónica and Andalucía regional government.

From 2013 to 2017 he was the main researcher and coordinator of HERMES (Healthy and Efficient Routes in Massive Open-Data Based Smart Cities-Citizen) a national R&D project where teams from 4 Spanish Universities (Vigo, Coruña, Carlos III and Seville) participate. UoS group main responsibility lies on monitoring the habits of the smart-city inhabitants and their physical activities, having in mind privacy and appropriate treatment of gathered data. Other tasks in this HERMES project triggered off a new research area in the TIC134 group concerning Deep Learning applied to traffic sign recognition and classification. From 2018 to 2021, he leaded VICTORY (Vision and Crowdsensing Technology for an Optimal Response in Physical-Security) a national R&D project where violent attacks in a building are recognized using machine and deep learning from CCTV images and accelerometers sensors from smartphones workers. Currently he is leading a regional project TAL.IA, where deep learning techniques are being used to translate Sign Language to text, helping deaf people to communicate with hearing ones and a national project (proof of concept projects), DISARM focused to transfer the technology generated in VICTORY to adapt it to the industry. He is also transferring the results about violence detection to a Israel startup focused on kindergartens https://www.eyeknow.ai/.

So far, the supervising and mentoring experience of Dr Álvarez García concerns 100 undergraduate students, 13 master's degree students. He directed 2 PhD (2018 and 2019) and currently, he is supervising 3 PhD students.

He has taught Spanish and English classes in several degrees (Computer Engineering, Technical Computer Engineering, Health Informatics) and Masters (Software Engineering and Technology), being the coordinator of several subjects related to algorithms and software technology. He also directed several courses focused on work-related technologies (Oracle, iOS and Android). He has carried out several research stays (Polytechnic University of Catalonia 2007 1 month, German Research Centre for Artificial Intelligence 2011 3 months, Pisa University 2015 2 months and Slovenian Jozef Stefan Institute 2017 3 months).

H-index (Google Scholar Profile): 15; Total cites (Google Scholar Profile): 1037
JCR Journals: 22 (13 Q1, 4 Q2, 2 Q3, 3 Q4); Total funding as main researcher: 525.000€ approx. Through 3 national, 1 regional (public) and 16 (68/83) private projects.

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications *(see instructions)*

1. López-Ortiz E.J., Sancho-Caparrini F., Martínez-del-Amor M.A., Soria-Morillo L. M., Álvarez- García J.A., **Hybrid agent-based methodology for testing response protocols. Knowledge-Based Systems**. Knowledge-Based Systems, 222 (2021).
2. Santaquiteria J.R, Velasco-Mata A., Vallez N., Bueno G., Álvarez-García, J. A., Deniz O. **Handgun detection using combined human pose and weapon appearance** IEEE Access 9 (2021)
3. Rendón-Segador, F.J., Álvarez-García, J.A., Enríquez, F., Deniz O. **ViolenceNet: Dense Multi-Head Self-Attention with Bidirectional Convolutional LSTM for Detecting Violence**. Electronics 10 (13), 1601
4. Álvarez-García J.A., Cvetković Božidara, Mitja Lustrek, 2020. **A Survey on Energy Expenditure Estimation using Wearable Devices**. Computing Surveys. (2020)

5. Salazar González, J. L., Zaccaro, C., Álvarez-García, J. A., Soria Morillo, L. M., & Sancho Caparrini, F. **Real-time gun detection in CCTV: An open problem.** Neural Network, 297-308. (2020)
6. Morillo Soria, L. M., Ortega, F.J., Álvarez-García, J.A., Velasco, F. and Fernández-Cerero, D., 2019. **How efficient deep-learning object detectors are?**. Neurocomputing. (2020)
7. Salazar González J.L., Morillo Soria, L. M., Álvarez-García J.A., Enríquez Ros F.E., Ruiz Jiménez, A. **Energy-Efficient Indoor Localization WiFi-Fingerprint System: An Experimental Study**. IEEE Access. (2019)
8. Fernández-Cerero, D. Fernández-Rodríguez J.Y., Álvarez-García, J. A., Morillo Soria, L. M., Fernández-Montes, **A. Single-Board-Computer clusters for Cloudlet Computing in Internet of Things**. Sensors. (2019)
9. Arcos-García, Á., Álvarez-García, J. A., Morillo Soria, L. M. **Deep neural network for traffic sign recognition systems: An analysis of spatial transformers and stochastic optimisation methods**. Neural Networks. (2018)
10. Arcos-García, Á., Álvarez-García, J. A., Morillo Soria, L. M. **Evaluation of deep neural networks for traffic sign detection systems**. Neurocomputing. (2018)
11. Fernandez-Rodriguez, J.Y., Álvarez-García, J.A., Arias Fisteus, J., Rodríguez Luaces, M.A. Corcoba Magaña, V. **Benchmarking real-time vehicle data streaming models for a Smart City**. Information Systems. (2017)
12. Arcos-García, Á., Soilán, M., Álvarez-García, J. A., & Riveiro, B. **Exploiting synergies of mobile mapping sensors and deep learning for traffic sign recognition systems**. Expert Systems with Applications. (2017)
13. Álvarez de la Concepción, M. Á., Morillo Soria, L. M., Álvarez-García, J. A., & González-Abril, L. **Mobile activity recognition and fall detection system for elderly people using Ameva algorithm**. Pervasive and Mobile Computing. (2017)
14. LM Soria Morillo, JA Álvarez-García, L Gonzalez-Abril, JA Ortega Ramírez. **Discrete classification technique applied to TV advertisements liking recognition system based on low-cost eeg headsets**. Biomedical Engineering Online. (2016)
15. H Gjoreski, S Kozina, M Gams,et al. (5/10). **Competitive Live Evaluations of Activity-Recognition Systems**. *Pervasive Computing, IEEE*, *14*(1), 70-77. (2015)

C.3. Research projects (As Principal investigator)

1. Title: TAL.IA: TrAducción de la Lengua de signos mediante Inteligencia Artificial
Funder Company/Institution: Junta de Andalucía I+D+i Reference: P20_01213
From: 05-10-2021   To: 31-12-2022   Funds: 37.700€   Role: Main researcher
2. Title: Detección automática de IndividuoS ARMados
Funder Company/Institution: Ministerio de Ciencia e Innovación Pruebas de Concepto
Reference: PDC2021-121197-C21 From: 01-12-2021 To: 30-11-2023
Funds: 75.900€   Role: Main researcher and coordinator (partner: Univ. Castilla La Mancha-Óscar Deniz)
3. Title: Vision and Crowdsensing Technology for an Optimal Response in Physical-Security
Funder Company/Institution: Plan Estatal 2013-2016 Retos, 2017
Reference: TIN2017-82113-C2-1-R From: 01-01-2018 To: 31-12-2020
Funder Company/Institution: Ministerio de Economía y Competitividad
Funds: 91.718€   Role: Main researcher and coordinator (partner: Univ. Castilla La Mancha-Óscar Deniz)
4. Title: Healthy and Efficient Routes in Massive Open-Data Based Smart Cities-Citizen
Funder Company/Institution: Plan Estatal 2013-2016 Retos, 2013
Reference: TIN2013-46801-C4-1-R From: 01-01-2014 To: 31-12-2016
Funder Company/Institution: Ministerio de Economía y Competitividad
Funds: 142.800€   Role: Main researcher and coordinator (partners: U. Vigo-Pedro Arias; U. Coruña-Miguel R. Luaces; UC3M- Mario Muñoz-Organero)

C.4. Contracts, technological or transfer merits

Reference: P003-20/E17   Principal investigator: Soria Morillo L.M/ Álvarez García J.A.
Title: Quality Management Tool Optimization for Android Devices
Funder: AERTEC Solutions, S.L. Funding: 3.000€ From: 02-03-2020   To: 02-04-2020

Reference: B19.P006-19/E17 Principal investigator: Álvarez García J.A. / Soria Morillo L.M
Title: Drive Focus   Funder: Okapi Ideas, S.L.
Funding: 10.000€   From:16-03-2019   To:30-09-2020

Reference: P010-19/E17   Principal investigator: Álvarez García J.A. / Soria Morillo L.M
Title: Wearable4Industrial   Funder Company/Institution: Aertec, S.L.
Funding: 9.288€   From:16-09-2018   To:14-03-2020

Reference: P050-18/E17   Principal investigator: Álvarez García J.A. / Soria Morillo L.M
Title: Smart Helmet: a Wearable Iot Helmet for Monitor Worker Safety
Funder: AERTEC Solutions, S.L. Funding: 4.000€ From: 01-10-2018   To: 31-12-2018

Reference: P008-15/E05   Principal researcher: Álvarez García J.A. / Soria Morillo L.M
Title: D-BoNES: Management software for deboning olives machines.
Funder: Pymesuma, S.L. Funding: 6800€   From:16-02-2015   To:30-09-2015

Reference: P026-14/E05   Principal researcher: Álvarez García J.A. / Soria Morillo L.M
Title: Olive-NaOH: Software Prediction Olives Cooking Application.
Funder: Pymesuma, S.L. Funding: 4000€   From: 01-08-2014   To:30-09-2014

Reference: PP045-12/E05   Principal researcher: Álvarez García J.A. / Ortega Ramírez J.A.
Title: Plataforma de Diseño de Instalaciones de Energías Renovables (PDIER).
Funder: Irradia Energía Solar S.L. Funds: 22.500€ From: 01-02-2012   To:30-06-2014

C.5. Patents

Patent: ES-2386134_B1: Sci (Simple Cluster Interface): Architecture For Managing User Tasks In A Cluster Via The Web. J. A. Ortega, A. Fernández-Montes, L. González, F. Velasco, J. Torres, M. J. Escalona, J. A. Alvarez, M. A. Álvarez, D. Fuentes, C. Angulo. Pub. No.: WO/2012/052581 International Application No.: PCT/ES2011/000310 Date: 26.04.2012

Patent: ES-2377371_B2: Energy-Efficient Monitoring And Localisation Device, System And Method. L. M. Soria, J.A. Álvarez, A. Fernández-Montes, J. A. Ortega, L. González. Pub. No.: WO2012/010727. International Application No.: PCT/ES2011/000237 Date: 26.01.2012

C.6. Software registered
Grid'5000 Toolbox: Software for grid computing environments, published for the research community.
CReTe (Claudicantes y Registro Telemático): Android software for monitoring patients with peripheral arterial disease

C.7. Research Stays
1. Universidad Politécnica de Cataluña. 19/01/2007-19/02/2007. Host: Dr. Cecilio Angulo.
2. DFKI: Deutsches Forschungszentrum für Künstliche Intelligenz (Germany). 01/06/2011-01/09/2011. Host: Dr. Alexander Kroener.
3. Pisa University (Italy). 31/05/2015 -30/07/2015. Host: Dr. Stefano Chessa.
4. Jozef Stefan Institute (Slovenia). 01/06/2017-30/09/2017. Host: Dr. Mitja Lustrek