MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

CV date	27/05/22

Part A. PERSONAL INFORMATION

First name	Pascual		
Family name	Campoy		
Gender (*)	Male	Birth date (dd/mm/yyyy)	
ID number			
e-mail	pascual.campoy@upm.es	URL Web	
Open Researcher and Contributor ID(ORCID) *	0000-0002-9894-2009		

(*) Mandatory

A.1. Current position

Position	Full Professor		
Initial date	23/04/2008		
Institution	Universidad Politécnica de Madrid		
Department/Center	Centro de Automática y Robótica		
Country	Spain	Teleph. number	+34 0676903
Key words	Unmanned Aerial Vehicles, Aerial Robotics, Computer Vision, Machine Learning		

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

Period	Position/Institution/Country/Interruption cause
Sep 1st 2014 to Feb 15th 2015	Visiting Professor / TUDelft / The Netherlands
Nov 1st 2013 to Dec 15th 2013	Visiting Professor/Tong Ji University/Shanghai(CHN)

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD on Industrial Engineering	Universidad Politécnica Madrid	1988
Ingeniero Industrial (Master+Degree)	Universidad Politécnica Madrid	1983

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

Scientific Contributions

In the field of Drone Autonomy (early research in applying pose estimation for UAV flights published in 2005) and in the field of ML for Dimensionality Reduction in Images (early work published in 2009). His scientific work has been published in around 200 papers, 12 of them referenced more than 90 times and an overall citation of around 3000 times. The spread of his contribution outcomes an h number of 26 in WoS and 38 in Google Scholar. His contributions have reached relevance at international level, achieving position 18th in UAV citations, position 10th in Aerial Robotics and position 2nd in Visual Control according to Google Scholar.

International collaboration

- Visiting Professor at TUDelft for 5 years (6 months of them full time and the rest contributing from UPM), Visiting professor at Tong JI University in Shanghai (CHN) for 6 weeks and visiting researcher at ARCAA and QUT (Australia) for four months.
- Principal Investigator in ten European Projects from UPM, two of them dedicated to researcher's mobility, as well as IP of the Spanish collaboration in one MISTI project with the Aerospace Control Lab at MIT.
- Host of around thirty international students for Summer Internship, Final Degree Project, Master Project, as well as director of nine PhD thesis by foreign students, coming from MIT (USA), TUDelft (NL), Northwestern Polytechnical U. (CHN), Beijing Institute of Technology

(CHN), ARCAA (Australia), Drexel U. (USA), Politecnico de Torino (I), Beihan U. (CHN), University of Koblenz (D), Orleans University (F), U. Napoli Federico II (i) …

Social Contributions

- Principal Investigator of around 40 Technological Transfer Projects, contracted by both MSE and large Corporations with U.P.M. Some of the known companies of these are: ARIBUS, SIEMENS, NATRUGY, UNIÓN FENOSA, ENCE, REE and INTA
- Co-inventor of three international patents and four different national patents, all of them are commercialized by private companies
- Founder of the spin-off company "Innovación en la Inspección Industrial de Imagenes S.L." (active for two years) and promoter of the start-up company "Dronomy" ruled by a former PhD student of mine.

Researchers Formation Contributions

- Founder and leader of the Research Group on "Computer Vision and Aerial Robotics" at UPM, with members belonging to two different Faculties (Industrial Eng. and Computer Science) and gathering together researchers in the fields of Robotics, AI and Computers. The Group has a steady formation of around 7 PhD, 10 master and 15 graduated students.
- Director of up to 20 PhD thesis, all of them have obtained the maximum grade "cum laude". Nineteen of them are currently working in Research/University in an area related to their PhD thesis (10 are Professors/researchers in foreign Universities, 6 in Spanish Univ., 2 are researchers in ML in a British and a Spanish company and 1 is CEO of a start-up)
- Coordinator of the Master Program of U.P.M. in "Automatics and Robotics", with the EURACE quality, that received around 200 applications for 70 post available every year. All our master students work in this sector short after their graduation.
- Editor of several international scientific journals: Journal of Intelligent & Robotic Systems (Springer), International Journal of Micro Air Vehicles (Sage Journals), Sensors (MDPI), Unmanned Systems (World Scientific), Frontiers in Neurorobotics (Frontiers), Machines (MDPI), Advances in Engineering Software (Elsevier).
- Evaluator of national projects (ANEP, MICIN, MINECO, AENOR, Autonomic Projects), of European Projects (R&D projects and People Program), as well as evaluator of other international projects for: Knowledge Foundation (SE), KAUST (SA), NOW (NL), UPAR (UAEU), STW (NL), TrygFonden (DK).

Other Relevant Contributions

- "I+DRONE 2021" Prize for the best innovative work on drones by Fundación ENAIRE and AIRBUS given by the Spanish Secretary of State in Transport and Mobility. Nov2021

Participation in top international competition:

- "OpenCV AI Competition" sponsored by Intel and Microsoft Azure. 3rd Place in Region Europe+Russia+Australasia Oct 2021
- "RAMI: Robotics for Asset Maintenance and Inspection" at IROS 2021 (CZ), 2nd Prize
- "Autonomous Drone Raicing Competition"at FUZZ-IEEE 2021 July 2021. (Lux.), 1st Prize.
- MBZIRC 2020 (United Arab Emirates): SkyEye team, made of UPM (E), UPO (E) & PUT (PL) & LAAS (F). 3rd Position in the Grand Challenge, coordinator of the intl. consortium.
- IMAV 2017 Intnl Micro Air Vehicle Conference and Competition. Toulouse (F) 2nd Position
- IMAV 2016. Beijing (CHN). 4th Position
- IARC 2014 International Aerial Robotics Competition. Yantai (China). Two Special awards "Best Obstacle Avoidance" and "Best Trajectory Controller".
- IMAV 2013. Toulouse (F).1st position in "Indoors Autonomy"
- IMAV 2012. Braunschweig (D). 2nd position in "Indoor Flight Dynamics -Rotary Wing MAV" and Special Prize for "Best Autonomy Performance"

Part C. RELEVANT MERITS *(sorted by typology)*
C.1. Publications *(see instructions)*

- “Zenithal isotropic object counting by localization using adversarial training“ in Neural Networks, Volume 145, Pages 155-163, ISSN 0893-6080, Authors: Javier Rodriguez-Vazquez, Adrian Alvarez-Fernandez, Martin Molina, Pascual Campoy. JCR: 8.050, Computer Science, Artificial Intelligence Q1, Neuroscience Q1; January 2022.
- "Adaptive Inattentional Framework for Video Object Detection with Reward-Conditional Training", Journal: IEEE Access, vol. 8, pp. 124451-124466, 2020
  Rodriguez-Ramos, J. Rodriguez-Vazquez, C. Sampedro and P. Campoy
  JCR (Clarivate): 4.098, Ranking: Computer Science, Information Systems Q1,
- "VPS-SLAM: Visual Planar Semantic SLAM for Aerial Robotic Systems", Journal IEEE Access, Volume: 8, Issue:1, Print ISSN: 2169-3536 Online ISSN: 2169-3536, March 2020. H. Bavle, P. De La Puente, J. How and P. Campoy
  JCR (Clarivate): 4.098, Ranking: Computer Science, Information Systems Q1
- “Onboard Detection and Localization of Drones Using Depth Maps”, Journal: IEEE Access, Volume: 8, Issue:1, Pages: 30480-30490 Print ISSN: 2169-3536. Feb. 2020
  Adrian Carrio, Sai Vemprala, Srikanth, Pascual Campoy and Jonathan P. How
  JCR (Clarivate) in 2018: 4.098, Ranking: Computer Science, Information Systems Q1,
- “Deep Learning-Based System for Automatic Recognition and Diagnosis of Electrical Insulator Strings”, IEEE Access (Volume: 7 , Pages: 101283–101308, July 2019, Carlos Sampedro, Javier Rodriguez-Vazquez, Alejandro Rodriguez-Ramos, Adrian Carrio, Pascual Campoy. JCR in2018: 4.098, Rank: Computer Science, Info. Systems Q1
- “Vision-Based Multirotor Following Using Synthetic Learning Techniques”, Journal: Sensors, volume 19, number: 21, article number: 4794, ISSN = 1424-8220, year: 2019
  Rodriguez-Ramos, Alejandro and Alvarez-Fernandez, Adrian and Bavle, Hriday, Campoy, Pascual and How, Jonathan P. JCR 2018: 3.031, Rank: Instments & Instion Q1
- “A Fully-Autonomous Aerial Robot for Search and Rescue Applications in Indoor Environments using Learning-Based Techniques”, Journal of Intelligent & Robotic Systems Springer Netherlands, Vol 95, pages: 601–627, ISSN 0921-0296, August 2019
  Carlos Sampedro, Alejandro Rodriguez-Ramos, Hriday Bavle, Adrian Carrio, Paloma de la Puente, Pascual Campoy. SiteScorein 2018: 2.83. Rank: Ind. & Manufacturing Eng Q1
- “A Deep Reinforcement Learning Strategy for UAV Autonomous Landing on a Moving Platform”, Journal of Intelligent & Robotic Systems, Springer Netherlands, Vol 93, pages: 351-366 Print ISSN 0921-0296 Feb 2019. Alejandro Rodriguez-Ramos, Carlos Sampedro, Hriday Bavle, Paloma de la Puente and Pascual Campoy. SiteScore in 2018: 2.83. Ranking: Ind. & Manufacturing Eng Q1

C.3. Research projects

- INSERTION, "UAV Perception, Control and Operation in Harsh Environments” ref: PID2021-127648OB-C32 , Programa Estatal para Impulsar la Investigación Científico-Técnica y su Transferencia, del Plan Estatal de Investigación Científica, Técnica y de Innovación, Starting date: 2022, Finish date: 2025
- “COMCISE: Complex Coordinated Inspection and Security missions by UAVs in cooperation with UGV”, ref: RTI2018-100847-B-C21. Funded by the Spanish Ministry of Science, Innovation & Universities, R&D Projects Program. P.I. of the first subproject and coordinator of the two subprojects. Duration: Jan. 2019 to Dec 2021. Funding 130.680,00€.
- “COPILOT: Photovoltaic Power Plant Control, Supervision & Optimal Operation by means of Synergic Integration of Drones, IoT & Communication Advanced Technologies” Ref: Y2020/EMT6368. Funded by Madrid Government under the R&D Synergic Projects Program. P.I. of the second subproject done by UPM that is coordinated by the first subproject done by UAH. Duration: July 2021 to June 2024. Funding 584.430,00€.
- “Mohammed Bin Zayed International Robotics Challenge Sponsorship”, ref: 2020-MBZIRC-10. PI and international coordinator of a Consortium with Pablo Olavide University

(E), Poznan Univ. of Technology (P) & LAAS (F), Funded by Khalifa University of Science and Technology, Duration: September 2018 – February 2020. Funding: 200,000$

- “Drone Autonomy” join project with Aerospace Control Lab. at MIT. Funded by MISTI “MIT International Science and Technology Initiatives”. PIs: Jonathan How (MIT) & Pascual Campoy (UPM). Duration: January 1st 2018 to August 31st 2019, Funding: 16.000 $
- “USA and Europe Cooperation in Mini UAVS” Ref: 269276. Funded by FP7 European Union, IRSES Program. PI and international coordinator. Duration: 06/01/2012-05/01/2016. UPM funding: 69.300 €.
- “Autonomous System for Emergency Management (SALINE)”. National R&D program RETOS-Colaboración from the Ministry of Economy and Concurrence, hired by IXION Industry and Aerospace S.L. PI of the UPM. Duration: 2016 to 2018. Funding 83.625,50€.
- “Autonomous System for Surveillance and Security base on a Multirotor Swarm (ADVISE)” National R&D program RETOS-Colaboración from the Spanish Ministry of Economy and Concurrence, contracted by IXION Industry and Aerospace S.L. PI of the tasks hired to UPM. Duration: 2016 to 2018. Funding 158.936,00€.
- “AEROS: Autonomous Working Windmill Inspection”. National R&D Program, RETOS-Colaboración RTC-2014-1977-3, with Diagnostiqa, Ixion Industry Aerospace y CENER. PI of the tasks hired to UPM. Duration: February 2014 to May 2016. Funding 227.139,00€.
- “I2: Power Line Intelligent Inspection”, IPT-2012-0491-120000. Funded by Spanish Ministry of Economy and Concurrence, PI of the tasks hired to UPM. Duration: 01/09/2012 to 31/07/2015. Funding: 328.100 €

C.4. Contracts, technological or transfer merits

Contracted projects:

- “Visual Detection for Autonomous Robotic Surveillance”, Contracted by Star Robotics (Statiun S.L.). PI of the UPM tasks. Duration: from Sept 2020 to May 2021.Funding: 20.000
- “Support on Computer Vision by Deep Learning”, Contracted by Sigma Rail S.L. PI of the UPM tasks. Three contracts in a row from Feb. 2019 to March 2020, Funding: 49.500,00€
- “DAR System WP 1-A Drone platform definition for Outdoor and Indoor A/C Inspection”. Contracted by AIRBUS Defense & Space, Ref: CT1807377. PI of the tasks hired to UPM. Three contracts in a row from Sept 2018 to Sept 2019, Total funding: 118,272.00€
- “Tropical Plants Detection, Recognition and Analysis from UAV Aerial Images” Contracted by INDIGO Drones (CR). PI of the tasks hired to UPM. Duration: 2017-18 Funding: 53.040€
- “Indoors Visual Inspection of Power Plant Boilers using UAV”. Contracted by GASNATURAL-Union Fenosa, PI of the UPM tasks Duration: 2017-18, Funding: 53,166 €
- “Windmill Blade Inspection through Computer Vision” Contracted by company TSR Wind S.L. PI of the tasks hired to UPM. Duration: 2016-17. Funding: 50.000 €.

Recent Patents:

- “Remotely Operated Air Reconnaissance Device“ Intl publication nr: WO2011/144497. Intnl application nr: PCT/EP2011/057503, Priority nr: 201030729 (ES). Priority date: 17 May 2010 (17.05.2010). Applicant: ARIES INGENIERÍA Y SISTEMAS S.A.; Inventors: Tejada Esteban, Luis Felipe; Freire Bouillon, Ladislas Ghislain; Campoy Cervera, Pascual; Mondragón Bernal, Iván F.
- "Método para la interpretación y análisis de pruebas de detección o diagnóstico”, ES 2452991 A1, ref: P 201331853(7), submitted 18 Dic 2013. Explotation: VinciLab Healthcare S.L. Inventors: Pimienta Escobar, Miguel; Campoy Cervera, Pascual; Sanchez Lopez, Jose Luis; Carrio, Adrian; Sampedro Perez, Carlos
- “Sistema automático para la detección de similitud visual entre marcas comerciales”, ref: ES20020003036 20021230, submitted 30 Dic 2002. Explotation: GRUPO 10 EMPRESARIAL. S.L. Inventors: Domínguez Cabrerizo, Sergio; Campoy Cervera, Pascual; Hernández Barrio, José Félix y Vicente Peña, Carlos Javier