

CURRICULUM VITAE ABREVIADO (CVA)

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

Part A. PERSONAL INFORMATION

First name	Francisco de Asís		
Family name	Ortega-Fernández		
Gender (*)	Male	Birth date	
ID number			
e-mail	fdeasis@uniovi.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0001-6735-6464	

A.1. Current position

Position	Full Professor		
Initial date	14/04/2009		
Institution	Universidad de Oviedo		
Department/Center	E. Politécnica Ingeniería Gijón	Área de Proyectos de Ingeniería	
Country	Spain	Tel. number	
Key words	IA in the Engineering field, sustainability, product design, project management		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position	Institution
21/11/94 - 12/03/95	Profesor Asociado tipo II	Universidad de Oviedo
15/03/95 - 11/02/96	Becario FICYT	Universidad de Oviedo
12/02/96 - 30/09/96	Profesor Asociado tipo II	Universidad de Oviedo
01/09/96 – 30/09/19	Profesor Tutor	UNED
23/10/96 - 20/03/01	Profesor Asociado tipo III	Universidad de Oviedo
01/09/97 – 30/12/16	IT Coordinator	UNED
21/03/01 - 13/04/09	Profesor Titular de Universidad	Universidad de Oviedo
14/04/09 – current	Catedrático de Universidad	Universidad de Oviedo

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Mining Engineer (Materials)	Oviedo (Spain)	2004
European Welding Engineer	CES (Spain)	2004
PhD	Oviedo (Spain)	2007

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

Coordinator of the Research Group in Project and Sustainable Engineering at the University of Oviedo, a multidisciplinary group consisting of 14 professors and 10 contracted researchers. The group works in fields related to machine learning modelling of engineering problems and the environmental assessment of industrial processes and wastes. The group has been recognized as a Group of Excellence by the Science Agency of the Principality of Asturias since the first call. He holds 4 active six-year research periods and 1 six-year transfer period.

From an educational perspective, he has 5 five-year periods, is the Director of the Interuniversity Master's Degree in Project Management, has participated in 5 educational innovation projects and he delivers lectures in other universities as Málaga, La Rioja or Pública de Navarra.

In terms of **training capacity**, the group has hired more than 200 researchers since its formation. 20 of them have continued their teaching and research activities and are currently university professors. Another 40 are currently researchers in various public and private R&D Centers. In addition, as a result of the research carried out, a startup (Innvel) has been formed, which is already developed and consolidated with more than 25 workers. The coordinator has supervised 18 doctoral theses, 8 of them in the last 10 years, all of which were awarded cum laude and 5 with an Extraordinary Doctorate Award. He has served as a mentor to other 35 doctoral students. He was a member of the Doctoral Commission of the University of Oviedo for 9 years and is a member of the Commission of the Doctoral Program in

Production, Environmental, and Project Engineering, where he coordinates the Methodologies, Feasibility, and Sustainability research line.

He is the **author** of 8 books, 8 book chapters, 48 articles in national and international journals indexed in the Journal Citation Report (JCR), and 18 in other indexed journals (Scopus/SJR). His h-index is 17 without self-citing. He has presented 138 conference papers, 119 of them with associated proceedings. He holds 8 patents (3 of them granted with prior examination, 1 with a Certificate of Commercial Exploitation) and 2 software registrations.

Regarding projects in competitive calls, he has been the main researcher of 44 projects, 22 of them European and the remaining 22 national and regional. He has also participated as a team member in 6 international projects and 21 national and regional projects. He has been the principal investigator in 7 Agreements with Public Administrations and participated in an Agreement as a team member.

Transfer activities are particularly noteworthy. He has participated as the main researcher in 105 contracts with companies and in 63 contracts as a team member, with more than half subsidized in various public business calls such as CDTI, IDEPA, and the European Union. This high number of projects was carried out with more than 30 local and international companies from diverse sectors such as solar plants, steel, engineering, or coffee production. This demonstrates, on one hand, the interest of research for companies that consider it valuable and a reference point, but also that an immediate transfer occurs to the entire business environment, 60% of which is local and, in many cases, comprises small and medium-sized enterprises (SMEs). He is the Director of the ArcelorMittal Chair of Research and Development since 2014 mainly devoted to increase the collaboration of students and researchers of both institutions. Another important aspect is the achievement in recent years of two projects in **Proof of Concept** calls that aim to transition technologies generated by the group from a Technology Readiness Level (TRL) under 7 to TRL7. Obtaining these calls demonstrates the innovative capacity of the group and is specifically validated when the first PoC has already led to a new sponsored project to bring the results into production.

About **internationalisation**, as a result of these relationships, international collaborations have been developed, leading to long-term partnerships with universities such as UTokyo, IPPortoalegre (PT), and Robert Gordon University (UK). These collaborations facilitate exchanges of personnel and doctoral students. This statement effectively conveys the international nature of the project's network and the ongoing academic exchanges. It highlights the global reach of the research and the potential for cross-cultural knowledge sharing and skill development. Other doctoral exchanges are done with Bond University (AUS) and Ambato (EC).

Regarding research evaluation activities, he has been an evaluator for the Research Personnel Evaluation Agencies of the Valencian and Andalusian Communities. He has also evaluated research projects of the European RFCS and FoF programs, as well as the EACE program. He has evaluated national projects of the Red.es program and the National Retos Plan. He is a Member of the Technical Coordination Committee **and Scientific Responsible on behalf of the Principality of Asturias** of the Renewable Energy and Hydrogen Program included within the Complementary R&D&i Plans of the Ministry of Science and Innovation, financed by the European Union Next Generation-EU under Component 17 of the Recovery, Transformation, and Resilience Plan. He is also a member of the AENOR Standardization Committee 157.

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

C.1. Publications (*see instructions*)

1. Terrados-Cristos, M., Alonso-Iglesias, G., Díaz-Piloneta, M., Fernández-Iglesias, A. (2021). Corrosion Prediction of Weathered Galvanised Structures Using Machine Learning Techniques. *Materials*, 14, 3906. Impact Factor (JCR): 3,748. Q1 (SCI)
2. Terrados-Cristos, M., Ortega-Fernández, F., Díaz-Piloneta, M., Rodríguez Montequín, V., García González, J. (2022). Potential Structural Damage Characterization through Remote Sensing Data: A Nondestructive Experimental Case Study. *Advances in Civil Engineering*, vol. 2022, Article ID 6557898. Impact Factor (JCR): 1,843. Q3 (SCI)
3. Terrados-Cristos, M., Ortega-Fernández, F., Díaz-Piloneta, M., Rodríguez Montequín, V., Álvarez-Cabal, J. V. (2022). Enhancing Wind Erosion Assessment of Metal Structures on Dry and Degraded Lands through Machine Learning. *Land*, 12, 1503. Impact Factor (JCR): 3,9. Q2 (SSCI)

4. Terrados-Cristos, M., Ortega-Fernández, F., Díaz-Piloñeta, M., Montequín, V. R., & Cabal, J. V. Á. (2023). Hybrid system model for wind abrasion segmentation using semi-automatic classification of remote sensing multispectral areas. *Heliyon*, 9(9). Impact Factor (JCR) (2022): 4,1. Q2 (SCI)
5. García, S. G., Montequín, V. R., Fernández, R. L., & Fernández, F. O. (2019). Evaluation of the synergies in cogeneration with steel waste gases based on Life Cycle Assessment: A combined coke oven and steelmaking gas case study. *Journal of Cleaner Production*, 217, 576-583. Impact Factor (JCR): 7,29. Q1 (SCI)
6. Arriba-Rodríguez, L. D., Ortega-Fernández, F., Villanueva-Balsera, J. M., & Rodríguez-Montequín, V. (2021). Corrosion predictive model in hot-dip galvanized steel buried in soil. *Complexity*, 2021, 1-11. Impact Factor (JCR): 2,12. Q2 (SCI)
7. Arriba-Rodríguez, L. D., Villanueva-Balsera, J., Ortega-Fernandez, F., & Rodriguez-Perez, F. (2018). Methods to evaluate corrosion in buried steel structures: a review. *Metals*, 8(5), 334. Impact Factor (JCR): 2,37. Q1 (SCI)
8. Rodríguez, A., Ortega, F., & Concepción, R. (2017). An intuitionistic method for the selection of a risk management approach to information technology projects. *Information Sciences*, 375, 202-218. Impact Factor (JCR): 5,5. Q1 (SCI)
9. Rodríguez, A., Ortega, F., & Concepción, R. (2016). A method for the evaluation of risk in IT projects. *Expert Systems with Applications*, 45, 273-285. Impact Factor (JCR): 4,29. Q1 (SCI)
10. de Cos, J., Sanchez, F., Ortega, F., & Montequin, V. (2008). Rapid cost estimation of metallic components for the aerospace industry. *International Journal of Production Economics*, 112(1), 470-482. Impact Factor (JCR): 6,02. Q1 (SCI)

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

F. Ortega, L. de Arriba, J. Villanueva, F. Rodriguez. **Optimisation of Warranties Based on the Lifetime of Buried Steel Structures**. XXIII Int. Congress on Project Engineering. Málaga, Julio 2019. Oral.

J. Laine, F. Ortega, R. Luiña, V. Álvarez. **Research trends on thickening mining wastes**. 18th International Seminar on Paste and Thickened Tailings. Cairns, Australia. 2015, Oral.

V. Rodríguez, F. Rodríguez, F. Ortega, J. Villanueva. **Modelling of lateral flow in a Hot Strip Mill (HSM) using adaptative techniques**. IEEE Seventh International Conference on Intelligent Computing and Information Systems, ICICIS'15 International Symposium on "Knowledge Engineering for Decision Support Systems. El Cairo, Dec 2015. Oral

G. Alonso, F. Ortega, P. Nistal, A. Fernández, H. Morán. **Cost Overruns in Infrastructure Projects: A Review. The Case of the Spanish Construction Sector**. Dortmund International Research Conference 2021. Dortmund 2021. Oral.

S. Andrés, J.V. Álvarez, J. Villanueva, F. Ortega. **Reduction of landfilling of steelmaking slags through Data Mining process analysis**. 4th International Congress on Energy and Environment Engineering and Management (CIIEM). Mérida, May 2011. Oral

V.R. Montequin, S. Cousillas, F. Ortega, J. Villanueva. **Analysis of the Success Factors and Failure Causes in Information & Communication Technology (ICT) Projects in Spain**. ProjMAN 2014 - International Conference on Project Management. Setubal 2015. Oral

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

Title: 2&R- Automatización de la fase de curvado sin contacto mediante visión y ML. Proof of Concept Asturias RIS3 -2022. Instituto de Desarrollo Económico del Principado de Asturias. 01/01/2023-31/12/2023. Budget: 30,000€ . Researcher (6)

Title: Desarrollo de un sensor virtual para la predicción de la formación de óxidos de corrosión por condensación en materiales y productos (PROXI). Proof of Concept Asturias RIS3 -2021. Instituto de Desarrollo Económico del Principado de Asturias. 28/12/2021 - 31/12/2022. 30,000€. Main researcher.

Title : Predicción mediante machine learning de la pérdida de eficiencia de las centrales eólicas por efecto de la abrasión y corrosión (PREOLION). FICYT. Consejería de Ciencia, Innovación y Universidad. 01/12/2021 - 31/05/2023. 126,400.16€. Main researcher.

Title: Ayudas para Grupos de Investigación de Excelencia del Principado de Asturias 2021-2023. Consejería de Ciencia, Innovación y Universidad. 01/01/2021- 31/12/2023. 168,155€. Main researcher.

Title: SOON Red Social de máquinas (PCI2019-103443). MINECO. Programa Estatal de I+D+i Orientada a los Retos de la Sociedad. Proyectos De I+D+i de programación conjunta internacional 2019. 01/11/2019 - 31/10/2022. 100,000€. Researcher.

Title: Revalorización de escorias de acería en mercados emergentes (NewSLAG). Mineco. Programa Retos de la Sociedad. 01/05/18- 31/12/2020. 124,281.56€. Main researcher

Title: SOJA - Detección, predicción y reducción de defectos producidos durante la colada continua mediante modernas técnicas de Big Data y sistemas de inspección de nueva generación. Mineco. RETOS I+D+i 2017. Main Researcher. 25/01/2016 - 31/12/2018. 126,400.16€.

Title: Modular Simulation tool for in-service behaviour prediction of the cooling water systems of the steelmaking industry (MODELCOR) (UE-13-RFSR-CT-2013-00033). Unión Europea. Research Fund for Coal and Steel (RFCS). 01/07/2013 - 30/06/2017. 187,597€. Main Researcher.

Title: Intelligent control station for improved quality management in flat steel production by a next generation decision support system (IConSys). UE - Research Fund for Coal and Steel (RFCS). 01/07/2012-31/12/2015. 139,882.00€. Main Researcher

Title: Off-shore Renewable Energy Conversion platforms Coordination Action (UE-10-ORECCA-241421-2). UE. 7th Framework Programme. 01/03/2010 - 31/08/2011. 27,820€. Main Researcher

C.4. Contracts, technological or transfer merits.

Modelización del comportamiento geotécnico y sostenimiento en centrales solares. Solar Steel (Private Research Centers program- IDEPA). 01/03/2024-28/02/2024. 31,460.00€. Main Researcher.

Forecasting condensation at the ArcelorMittal Gjhent Stock yard. ArcelorMittal Belgium. 01/12/2022-31/11/2023. Researcher. 29,040€

Visión Artificial y Deep Learning para la detección de cambios y usos del suelo en el territorio y su representación directa en las bases de datos cartográficas. Seresco (National Program Red.es). 01/03/2023-28/02/2024. 42,350.00€. Main Researcher.

Desarrollo de un sistema de determinación de profundidad y detección de vertidos en zonas portuarias mediante algoritmos de inteligencia artificial y sensores de precisión con uso de drones. DG Agua, Principado de Asturias. 14/06/2023-14/06/2024, 18,150.00€. Main Researcher.

Desarrollo de un modelo basado en datos para la predicción de la corrosión de carril. Fundación Idonial. 01/12/2023-30/11/2025. 44.165 €, Researcher.

Predicción Mediante técnicas de las características de IA Portantes Del Suelo Destinado A Centrales Solares. Gonvarri MS R&D S.L. 23/09/2022-23/04/2023. 14,520€. Main Researcher.

Desarrollo de un sistema para la predicción de oxidación por el punto de rocío de almacenes de bobinas. ArcelorMittal I3. 06/02/2018-06/08/2018. 12,100€. Main Researcher.

Desarrollo de modelos para el dimensionamiento del sobreespesor en estructuras expuestas al ambiente. ArcelorMittal I3. 04/02/2021-04/05/2021, 15,730€. Co-main researcher.

Tecnologías para la supervisión y sensorización remota de parámetros ambientales en minas y vertederos. ArcelorMittal Mining. 26/07/2018-26/12/2018. 54,400€. Main researcher.

Patent. F. Ortega Fernández; F. Rodríguez; J. V. Álvarez Cabal; J. M. Mesa Fernández; G. Martínez Huerta; M. Cueto Cuiñas. Título: Cápsula para la preparación de bebidas con deflectores. ES. Priority Date: 29/05/2012 . Exploiter: Fast Eurocafé (Commercial Exploitation Agreement may 2016).