



Artificial Intelligence & Robotics @ SPAIN

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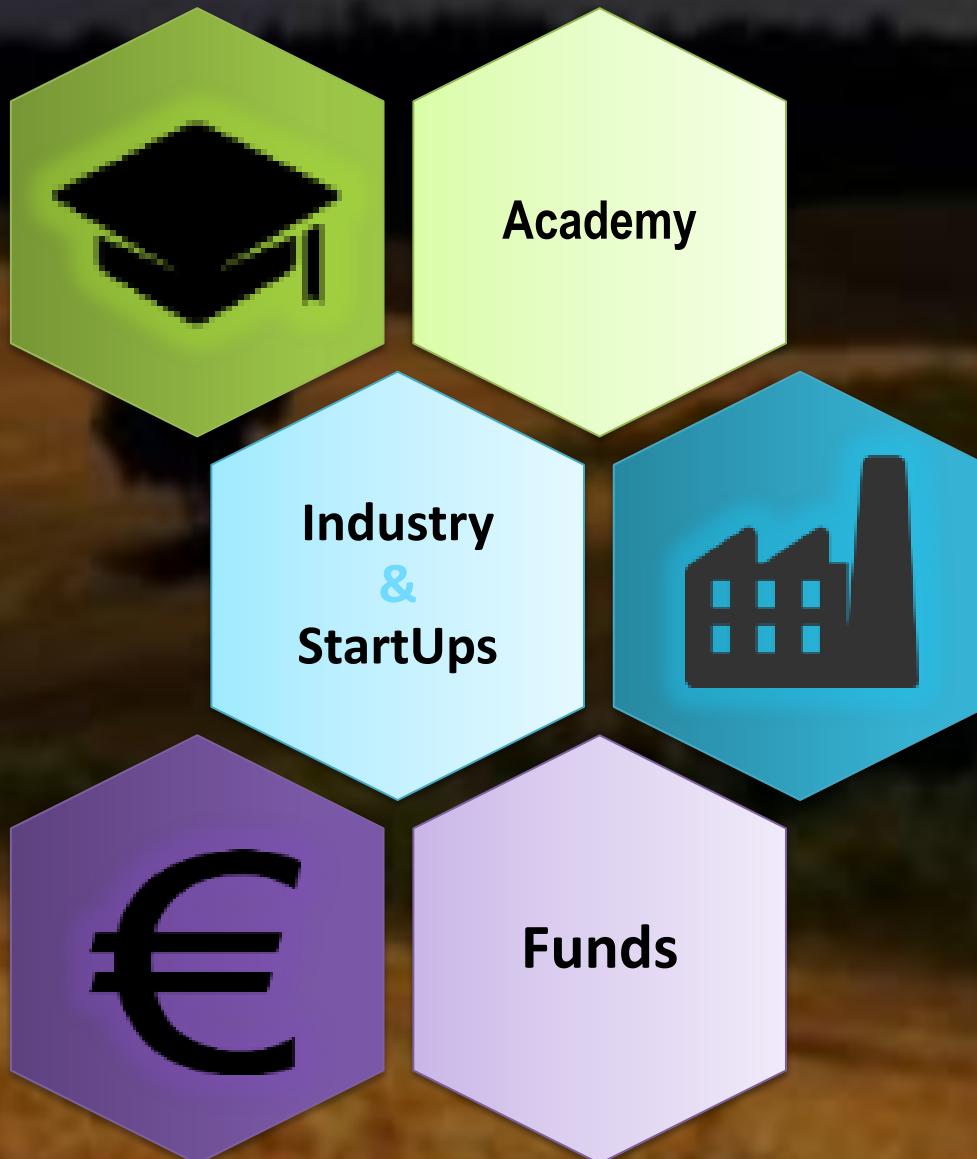
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Spanish Landscape AI & Robotics





Many AI&R Groups in Spain



Topics on
which we are
STRONG



Strong Topics (AI)

- **Multiagents:** IIIA, URJC, UPV, UCM
- **Machine learning:** CIA, IIIA, UPC, UPM
- **Optimization:** UGR, UMA, IIIA, UC3M
- **Planning:** UPF, UC3M, UPV
- **Deduction:** UdL, IIIA, UdG, UPC
- **Ontologies:** UPM, IIIA
- **Fuzzy logic:** USC, UPN, UGR, IIIA
- **Big data:** UGR, UdC
- **Natural Language:** UNED, UPV-EHU



Strong Topics (Robotics)

- **Vision**: IRI, CVC, URV, UPF, UA
- **Robotics**:
 - **Service**: CAR, UC3M, IRI, UZ, Tecnalia
 - **H-R Cooperation**: IRI, UPM, Tecnalia
 - **Medical**: UPC, CAR, IC
 - **Agriculture**: CAR, UPV
 - **Aerial / underwater**: US, UdG, UJI



International Conferences

Carles Sierra, IIIA: local chair IJCAI-11, program chair IJCAI-17

Enrique Alba, UMA: general chair GECCO-13

Francisco Herrera, UGR: prg. co-chair FUZZ-13, co-chair BigData-15

Hector Geffner, UPF: general chair ECAI-14

Anna I. Esparcia-Alcázar, UPV: general chair GECCO-15

Christian Blum, IIIA: prg. chair HM-17, prg. co-chair ANTS-18

Senén Barro, USC: local chair ECAI-20

Carlos Balaguer, UC3M: general chair IROS-18

Alberto Sanfeliu, IRI: co-chair ICCV-11, co-chair ICPR-00



In addition ...

Godó (IIIA): co-e-i-c *Fuzzy Sets and Systems*

Herrera (UGR): e-i-c *Information Fusion*, e-i-c *Soft Computing*

Onaindía (UPV): e-i-c *AI Communications*

Godó, Rodríguez, Manyà (IIIA), Moral (UGR): ass. ed *Artificial Intelligence*

Porta (IRI), Martínez (UZ): ass. editor *Trans. on Robotics*

+ 14 EurAI fellows.

Ramon López de Mántaras (IIIA), *EurAI service award 17*

Agirre (Tecnalia), Balaguer (UC3M), Ollero (US): Board SPARC PPP

Balaguer (UC3M): co-chair IEEE-TC Aerial Robotics and UAS



Links



AEPIA: www.aepia.org

Spanish AI Association

ACIA: www.acia.cat

Catalan AI Association

HISPAROB: www.hisparob.es

Spanish Platform on Robotics

SEIDROB: www.seidrob.es

Spanish Society for R&D in Robotics

AER: www.aer-automation.com

Spanish Robotics and Automation Association



Acronyms

CAR	Centro de Automática y Robótica	Madrid
CIA	Centro de Inteligencia Artificial	Gijón
CVC	Centre de Visió per Computador	Bellaterra
IC	Instituto Cajal	Madrid
IIIÀ	Institut d'Investigació en Intel.ligencia Artificial	Bellaterra
IRI	Institut de Robòtica I Informàtica Industrial	Barcelona
UA	Universidad de Alicante	Alicante
UC3M	Universidad Carlos III de Madrid	Madrid
UCM	Universidad Complutense de Madrid	Madrid
UdC	Universidade da Coruña	La Coruña
UdG	Universitat de Girona	Girona



Acronyms (II)

UdL	Universitat de Lleida	Lleida
UJI	Universitat Jaume I	Castellón
UGR	Universidad de Granada	Granada
UMA	Universidad de Málaga	Málaga
UNED	Universidad Nacional de Educación a Distancia	Madrid
UPC	Universitat Politècnica de Catalunya	Barcelona
UPF	Universitat Pompeu Fabra	Barcelona
UPM	Universidad Politécnica de Madrid	Madrid
UPN	Universidad Pública de Navarra	Pamplona
UPV	Universitat Politècnica de València	Valencia
UPV/EHU	Universidad del País Vasco-Euskal Herriko Unibertsitatea	



Acronyms (III)

URJC	Universidad Rey Juan Carlos	Madrid
URV	Universitat Rovira i Virgili	Tarragona
US	Universidad de Sevilla	Sevilla
USC	Universidade de Santiago de Compostela	Santiago de Compostela
UZ	Universidad de Zaragoza	Zaragoza

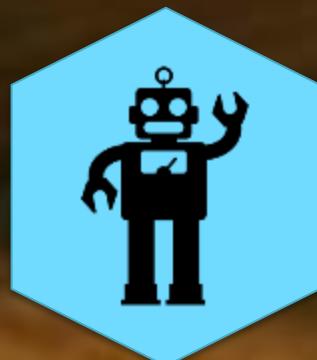


Industry: AI & Robotics



ACCENTURE, ATOS, BBVA_D&A, BEEVA,
BIG_ML, EVERIS, GMV, IBM, MINDSAIT,
STRATIO, SYNEGYC PARTNERS, ...

> 40 StartUps



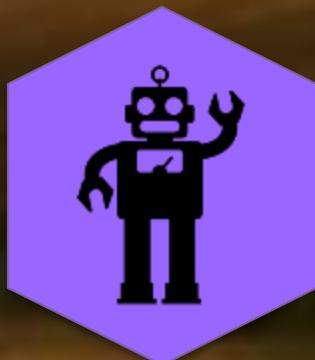
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ASTI, ARQUIMEA, DGH, GMV,
IXION, MARSI, PAL, PROYTECSA,
ROBOTNIK, TECNATOM, ...

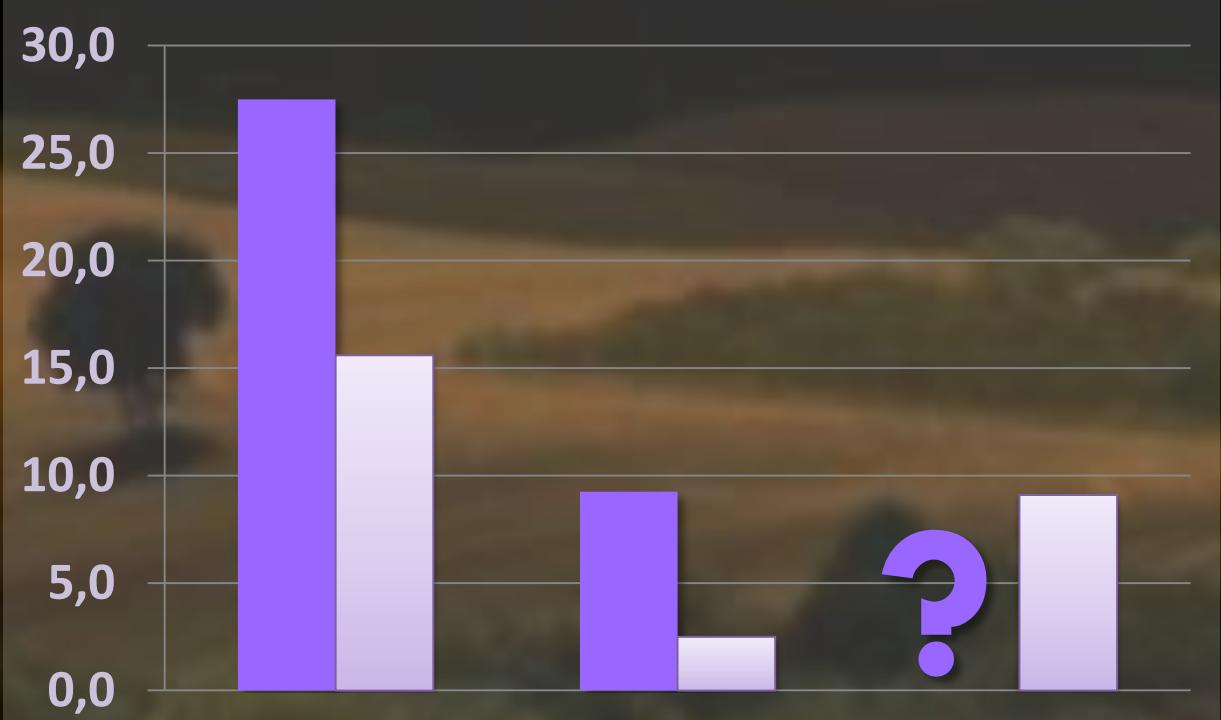
> StartUps : AGROBOT, AISOY,
DRONETOOLS, ERLE, GOGOA, MAGLINE,
QUATERNIUM, ROBOTICSA, SADAKO, ...



Funds: AI & Robotics



Budget (M€)/year (2014-17) *



VC

* **SPAIN:** CDTI (30% Grants eq.) + MINETAD (22% Grants)

INT: H2020 (70-100% Grants. Not included Big-Data @ AI)

VC: ASCRI (Spanish Venture Capital & Private Equity Association)



Funds: Private example

AI.INNOVATION SPACE



Budget: 6M€ (2018-21)

Objectives:

- Development innovation projects
- Generation of technology-based companies
- Training students and professionals
- Creation of an AI ecosystem



Spanish R&D Strategy

National R&D and Innovation Plan (2017-2020)



+ Strategic Actions: (1) Health, (2) Digital Society, (3), Industry 4.0



Spanish R&D Strategy

AI @ Dig. Society (Language Techs): 90 M€ (2016-21)



>> *NLP, Bots, Automatic translation, ...*



Spanish R&D Strategy

AI @ Industry 4.0: 170 M€ (2016 - ...)



>> *Robotics, BigData, AI, Cloud, 3D, Cybersecurity, ...*



Spanish R&D Strategy: Future

Digital Strategy for Spain



Ecosystems 4.0



Data



Citizens



Regulation



Infrastructures

=> Artificial Intelligence one of the key technologies



- White paper on **AI and Big Data**
(10 experts, Expected July 2018)
- White paper on **Robotics**
[http://intranet.ceautomatica.es/og/robotica/
libro-blanco-de-la-robotica](http://intranet.ceautomatica.es/og/robotica/libro-blanco-de-la-robotica)

AI & Robotics @ SPAIN:

Landscape

- Cutting-edge Universities and Research Centres @ AI & Robotics.
- Strong Big Companies
- StartUp ecosystems
- Public + Private funds

Spanish Strategy

- National Plan R&D
- Strategic Actions: Language Technologies s & Industry 4.0
- *Soon >> Digital Strategy for Spain*





Thanks for your attention

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