c v n CURRÍCULUM VÍTAE NORMALIZADO

Filippo Bistaffa

GOBIERNO DE ESPAÑA
MINISTERIO DE ECONOMÍA, INDUSTRIA Y COMPETITIVIDAD

FECYT
FUNDACIÓN ESPAÑOLA PARA LA CIENCIA Y LA TECNOLOGÍA

Summary of CV

This section describes briefly a summary of your career in science, academic and research; the main scientific and technological achievements and goals in your line of research in the medium -and long- term. It also includes other important aspects or peculiarities.

I received the Ph.D. degree in computer science from the University of Verona, Italy, in 2016. I am currently a Marie Skłodowska-Curie Fellow at IIIA-CSIC, as part of a H2020-MSCA-IF-2016-funded project entitled "Collectiveware: Highly-parallel algorithms for collective intelligence". My research focuses on multi-agent systems, a theoretic model used to describe and solve problems in many real-world scenarios, including collective energy purchasing and ridesharing. The complex dynamics among the large number of entities in these systems usually result in very hard optimisation problems. My research aims at dealing with this complexity, both from a theoretical perspective (proposing novel algorithms and models) and from a practical one, using Graphics Processing Units (GPUs) to speed-up the execution of algorithms used to compute the solutions.

Filippo Bistaffa

Surname(s):	**Bistaffa**
Name:	**Filippo**
Passport:	**YA5165133**
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Date of birth:	**29/06/1987**
Gender:	**Male**
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Current professional situation

Employing entity: Instituto de Investigación en Inteligencia Artificial   **Type of entity:** State agency

Professional category: Marie Skłodowska-Curie Fellow

Start date: 16/06/2017

Type of contract: Grant-assisted student (pre or post-doctoral, others)   **Dedication regime:** Full time

Primary (UNESCO code): 330411 - Computing systems design

Performed tasks: Main researcher for project "Collectiveware: Highly-Parallel Algorithms for Collective Intelligence" (H2020-MSCA-IF-2016 HPA4CF)

Previous positions and activities

	Employing entity	Professional category	Start date
	University of Verona	Research associate	01/01/2016

Employing entity: University of Verona   **Type of entity:** University
Professional category: Research associate
Start-End date: 01/01/2016 - 30/06/2017   **Duration:** 1 year - 6 months

Education

University education

1st and 2nd cycle studies and pre-Bologna degrees

1 **University degree:** Higher degree
Name of qualification: M.Sc. Engineering and Computer Science
Degree awarding entity: University of Verona
Date of qualification: 22/03/2012
Average mark: Excellent

2 **University degree:** Middle degree
Name of qualification: B.Sc. Computer Engineering
Degree awarding entity: University of Pavia
Date of qualification: 15/09/2009
Average mark: Excellent

Doctorates

Doctorate programme: Computer Science
Degree awarding entity: University of Verona   **Type of entity:** University
Date of degree: 22/04/2016
European doctorate: Yes
Thesis title: Constraint Optimisation Techniques for Real-World Applications
Thesis director: Alessandro Farinelli

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
Spanish	B1	B1	B1	B1	B1
English	C2	C2	C2	C2	C2
Italian	C2	C2	C2	C2	C2

Teaching experience

General teaching experience

1   **Name of the course:** Algorithms (Programming Laboratory II)
University degree: Bioinformatics
Start date: 01/10/2015   **End date:** 30/06/2016
Entity: University of Verona   **Type of entity:** University
Faculty, institute or centre: Department of Computer Science

2   **Name of the course:** Algorithms (Programming Laboratory II)
University degree: Bioinformatics
Start date: 01/10/2013   **End date:** 30/06/2014
Entity: University of Verona   **Type of entity:** University
Faculty, institute or centre: Department of Computer Science

Experience supervising doctoral thesis and/or final year projects

Project title: Forming Groups for Social Ridesharing with Time Constraints (MSc Thesis)
Entity: University of Verona   **Type of entity:** University
Student: Francesco Donato
Date of reading: 15/03/2015

Scientific and technological experience

Scientific or technological activities

R&D projects funded through competitive calls of public or private entities

1   **Name of the project:** Collectiveware: Highly-parallel algorithms for collective intelligence
Entity where project took place: Instituto de Investigación en Inteligencia Artificial   **Type of entity:** State agency
Name principal investigator (PI, Co-PI....): Juan A. Rodríguez-Aguilar
Nº of researchers: 1
Funding entity or bodies:
Marie Sklodowska-Curie Fellowship (European Commission)   **Type of entity:** Public Research Body

Start-End date: 16/06/2017 - 16/06/2019
Total amount: 158.121,6 €

2   **Name of the project:** Development of AI models and techniques for sustainable commuting
Entity where project took place: University of Verona   **Type of entity:** University
City of entity: Verona, Veneto, Italy
Name principal investigator (PI, Co-PI....): Alessandro Farinelli
Nº of researchers: 1

Start-End date: 01/01/2016 - 30/06/2017
Total amount: 29.000 €

Scientific and technological activities

Scientific production

Publications, scientific and technical documents

1   Filippo Bistaffa; Alessandro Farinelli. A COP Model For Graph-Constrained Coalition Formation.
    Journal of Artificial Intelligence Research. 62, pp. 133 - 153. AAAI Press, 2018. Available on-line at:
    <https://www.jair.org/index.php/jair/article/view/11205>.
    Type of production: Scientific paper   **Format:** Journal
    Corresponding author: Yes

2   Filippo Bistaffa; Alessandro Farinelli; Georgios Chalkiadakis; Sarvapali D Ramchurn. A Cooperative
    Game-Theoretic Approach to the Social Ridesharing Problem. Artificial Intelligence. 246, pp. 86 - 117. Elsevier,
    2017. Available on-line at: <http://www.sciencedirect.com/science/article/pii/S0004370217300243>.
    DOI: 10.1016/j.artint.2017.02.004
    Type of production: Scientific paper   **Format:** Journal
    Corresponding author: Yes
    Impact source: Journal Citation Reports   **Category:** Artificial Intelligence
    Impact index in year of publication: 3.034   **Journal in the top 25%:** Yes

3   Alessandro Farinelli; Manuele Bicego; Filippo Bistaffa; Sarvapali D. Ramchurn. A Hierarchical Clustering
    Approach to Large-scale Near-optimal Coalition Formation with Quality Guarantees. International Scientific
    Journal Engineering Applications of Artificial Intelligence. 59, pp. 170 - 185. Elsevier, 2017. Available on-line at:
    <http://www.sciencedirect.com/science/article/pii/S0952197616302536>.
    DOI: 10.1016/j.engappai.2016.12.018
    Type of production: Scientific paper   **Format:** Journal
    Corresponding author: No
    Impact source: Journal Citation Reports   **Category:** Artificial Intelligence
    Impact index in year of publication: 2.819   **Journal in the top 25%:** Yes

4   Filippo Bistaffa; Alessandro Farinelli; Jesús Cerquides; Juan A. Rodríguez-Aguilar; Sarvapali D. Ramchurn.
    Algorithms for Graph-Constrained Coalition Formation in the Real World. ACM Transactions on Intelligent Systems
    and Technology. 8 - 4, ACM, 2017.
    DOI: 10.1145/3040967
    Type of production: Scientific paper   **Format:** Journal
    Corresponding author: Yes
    Impact source: Journal Citation Reports   **Category:** Artificial Intelligence
    Impact index in year of publication: 2.973   **Journal in the top 25%:** Yes

5   Filippo Bistaffa; Nicola Bombieri; Alessandro Farinelli. An Efficient Approach for Accelerating Bucket Elimination
    on GPUs. IEEE Transactions on Cybernetics. 47 - 11, pp. 3967 - 3979. IEEE, 2017. Available on-line at:
    <http://ieeexplore.ieee.org/document/7536134/>.
    DOI: 10.1109/TCYB.2016.2593773

Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes

Impact source: Journal Citation Reports **Category:** Artificial Intelligence
Impact index in year of publication: 8.803 **Journal in the top 25%:** Yes

6 Michele Roncalli; Filippo Bistaffa; Alessandro Farinelli. Decentralized Power Distribution in the Smart Grid with Ancillary Lines. Mobile Networks and Applications. pp. 1 - 9. Springer, 2017. Available on-line at: <https://link.springer.com/article/10.1007/s11036-017-0893-y>.
DOI: 10.1007/s11036-017-0893-y
Type of production: Scientific paper **Format:** Journal
Corresponding author: No

Impact source: Journal Citation Reports **Category:** Computer Science, Hardware & Architecture
Impact index in year of publication: 2.497 **Journal in the top 25%:** Yes

Works submitted to national or international conferences

1 **Title of the work:** CUBE: A CUDA Approach for Bucket Elimination on GPUs
Name of the conference: European Conference on Artificial Intelligence (Rank A)
Type of event: Conference
Corresponding author: Yes
City of event: The Hague, Zuid-Holland, Holland
Date of event: 29/08/2016
Type of contribution: Scientific book or monograph
Filippo Bistaffa; Nicola Bombieri; Alessandro Farinelli. pp. 125 - 132. 2016. Available on-line at: <http://ebooks.iospress.nl/publication/44750>.
DOI: 10.3233/978-1-61499-672-9-125

2 **Title of the work:** Recommending Fair Payments for Large-Scale Social Ridesharing
Name of the conference: ACM Conference on Recommender Systems (Rank B)
Type of event: Conference
Corresponding author: Yes
City of event: Vienna, Austria
Date of event: 16/09/2015
Organising entity: ACM
Type of contribution: Scientific book or monograph
Filippo Bistaffa; Alessandro Farinelli; Georgios Chalkiadakis; Sarvapali D. Ramchurn. pp. 139 - 146. Available on-line at: <http://dl.acm.org/citation.cfm?doid=2792838.2800177>.
DOI: 10.1145/2792838.2800177

3 **Title of the work:** Sharing Rides with Friends: a Coalition Formation Algorithm for Ridesharing
Name of the conference: AAAI Conference on Artificial Intelligence (Rank A*)
Type of event: Conference
Corresponding author: Yes
City of event: Austin, United States of America
Date of event: 25/01/2015
Organising entity: AAAI
Type of contribution: Scientific book or monograph
Filippo Bistaffa; Alessandro Farinelli; Sarvapali D. Ramchurn. pp. 608 - 614. 2015. Available on-line at: <http://www.aaai.org/ocs/index.php/AAAI/AAAI15/paper/view/9622>.

4   **Title of the work:** Optimising Memory Management for Belief Propagation in Junction Trees using GPGPUs
Name of the conference: IEEE International Conference on Parallel and Distributed Systems (Rank B)
Type of event: Conference
Corresponding author: Yes
City of event: Hsinchu, Taiwan
Date of event: 16/12/2014
Organising entity: IEEE
Type of contribution: Scientific book or monograph
Filippo Bistaffa; Alessandro Farinelli; Nicola Bombieri. pp. 526 - 533. 2014. Available on-line at: <http://ieeexplore.ieee.org/document/7097850>.
DOI: 10.1109/padsw.2014.7097850

5   **Title of the work:** Anytime Coalition Structure Generation on Synergy Graphs
Name of the conference: International Conference on Autonomous Agents and Multiagent Systems (Rank A*)
Type of event: Conference
Corresponding author: Yes
City of event: Paris, Île de France, France
Date of event: 05/05/2014
Organising entity: IFAAMAS
Type of contribution: Scientific book or monograph
Filippo Bistaffa; Alessandro Farinelli; Jesús Cerquides; Juan Rodríguez-Aguilar; Sarvapali D. Ramchurn. pp. 13 - 20. 2014. Available on-line at: <http://dl.acm.org/citation.cfm?id=2615737>.

6   **Title of the work:** Anytime Coalition Structure Generation on Scale-Free and Community Networks
Name of the conference: International Joint Workshop on Optimisation in Multiagent Systems and Distributed Constraint Reasoning (Rank W)
Type of event: Workshop
Corresponding author: Yes
City of event: Paris, Île de France, France
Date of event: 05/05/2014
Organising entity: IFAAMAS
Type of contribution: Scientific book or monograph
Filippo Bistaffa; Alessandro Farinelli; Jesús Cerquides; Juan Rodríguez-Aguilar; Sarvapali D. Ramchurn. 2014.

7   **Title of the work:** Parallel Algorithms for Hard Combinatorial Optimisation Problems in Multi-Agent Systems (Doctoral Consortium)
Name of the conference: International Conference on Autonomous Agents and Multiagent Systems (Rank A*)
Corresponding author: Yes
City of event: Paris, Île de France, France
Date of event: 05/05/2014
Organising entity: IFAAMAS
Type of contribution: Scientific book or monograph
Filippo Bistaffa. pp. 1717 - 1718. Available on-line at: <http://dl.acm.org/citation.cfm?id=2616142>.

8   **Title of the work:** A Fast Approach to Form Core-Stable Coalitions Based on a Dynamic Model
Name of the conference: IEEE International Joint Conferences on Web Intelligence and Intelligent Agent Technologies (Rank B)
Type of event: Conference

Corresponding author: Yes
City of event: Atlanta, United States of America
Date of event: 17/11/2013
Organising entity: IEEE
Type of contribution: Scientific book or monograph
Filippo Bistaffa; Alessandro Farinelli. pp. 122 - 129. 2013. Available on-line at:
<http://ieeexplore.ieee.org/document/6690780>.
DOI: 10.1109/WI-IAT.2013.100

9   **Title of the work:** Coalitional Energy Purchasing in the Smart Grid
Name of the conference: IEEE International Energy Conference & Exhibition
Type of event: Conference
Corresponding author: No
City of event: Firenze, Toscana, Italy
Date of event: 09/09/2012
Organising entity: IEEE
Type of contribution: Scientific book or monograph
Meritxell Vinyals; Filippo Bistaffa; Alessandro Farinelli; Alex Rogers. pp. 848 - 853. 2012. Available on-line
at: <http://ieeexplore.ieee.org/document/6348270>.
DOI: 10.1109/energycon.2012.6348270

10   **Title of the work:** Decentralised Stable Coalition Formation Among Energy Consumers in the Smart Grid
(demonstration)
Name of the conference: International Conference on Autonomous Agents and Multiagent Systems (Rank
A*)
Type of event: Conference
Corresponding author: Yes
City of event: Valencia, Valencian Community, Spain
Date of event: 04/06/2012
Organising entity: IFAAMAS
Type of contribution: Scientific book or monograph
Filippo Bistaffa; Alessandro Farinelli; Meritxell Vinyals; Alex Rogers. pp. 1461 - 1462. 2012. Available on-line
at: <http://dl.acm.org/citation.cfm?id=2344061>.

11   **Title of the work:** Stable Coalition Formation Among Energy Consumers in the Smart Grid
Name of the conference: International Workshop on Agent Technologies for Energy Systems (Rank W)
Corresponding author: No
City of event: Valencia, Valencian Community, Spain
Date of event: 04/06/2012
Organising entity: IFAAMAS
Type of contribution: Scientific book or monograph
Meritxell Vinyals; Filippo Bistaffa; Alessandro Farinelli; Alex Rogers. 2012.

R&D management and participation in scientific committees

Organization of R&D activities

1   **Title of the activity:** Program chair for AAAI Conference on Artificial Intelligence, AAAI (A*)

2   **Title of the activity:** Program chair for European Conference on Artificial Intelligence, ECAI (A)

3   **Title of the activity:** Program chair for International Joint Conference Conference on Artificial Intelligence, IJCAI (A*)

4   **Title of the activity:** Program chair for International Workshop on Optimisation in Multiagent Systems, OptMAS

5   **Title of the activity:** Program chair for International Workshop on Teams in Multiagent Systems, TEAMAS

6   **Title of the activity:** Reviewer for Artificial Intelligence, AIJ (Q1)

7   **Title of the activity:** Reviewer for IEEE Transactions on Cybernetics, IEEE CYB (Q1)

8   **Title of the activity:** Reviewer for RoboCup International Symposium

Other achievements

Stays in public or private R&D centres

1   **Entity:** University of Southampton   **Type of entity:** University
     Faculty, institute or centre: ECS Department
     City of entity: Southampton, Hampshire and Isle of Wight, United Kingdom
     Start-End date: 01/06/2014 - 31/03/2015
     Goals of the stay: Guest
     Provable tasks: Research of AI methods for sustainable urban commuting

2   **Entity:** IIIA-CSIC   **Type of entity:** University Research Institute
     City of entity: Barcelona, Catalonia, Spain
     Start-End date: 01/06/2013 - 30/06/2013

Goals of the stay: Guest
Provable tasks: Research of AI methods for collective formation

Obtained grants and scholarships

1   **Name of the grant:** H2020-MSCA-IF-2016 (158.121 EUR)
   Aims: Post-doctoral
   Awarding entity: Comisión Europea   **Type of entity:** EU
   Conferral date: 16/06/2017   **Duration:** 2 years
   End date: 15/06/2019
   Entity where activity was carried out: Instituto de Investigación en Inteligencia Artificial

2   **Name of the grant:** Doctoral grant (~41.000 EUR)
   Awarding entity: Cariverona Foundation
   Conferral date: 01/01/2013   **Duration:** 3 years
   End date: 31/12/2015
   Entity where activity was carried out: University of Verona
   Faculty, institute or centre: Department of Computer Science

3   **Name of the grant:** Juan de la Cierva (50.000 EUR, renunciado)
   Aims: Post-doctoral
   Awarding entity: Ministerio de Ciencia e Innovación   **Type of entity:** State agency
   Conferral date: 07/11/2017   **Duration:** 2 years