Gennaro Vessio

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Position

- **Fixed-term Researcher (art. 24, paragraph 3-b, Law 240/10)** *15/9/2023 – present*
  Department of Computer Science, University of Bari Aldo Moro
- **National Scientific Qualification (Associate Professor)** *10/10/2022*
  09/H1, ING-INF/05

Education and Research Experience

- **Fixed-term Researcher (art. 24, paragraph 3-a, Law 240/10)** *29/7/2019 – 14/9/2023*
  Department of Computer Science, University of Bari Aldo Moro
- **Research Fellowship** *17/7/2017 – 28/7/2019*
  Department of Computer Science, University of Bari Aldo Moro
- **Ph.D. in Computer Science and Mathematics** *28/4/2017*
  Department of Computer Science, University of Bari Aldo Moro
- **Master's Degree in Computer Science (cum laude)** *15/10/2013*
  Department of Computer Science, University of Bari Aldo Moro

Main Teaching Activities

Courses

- **Computational Intelligence** *a.y. 2023/24 – present*
- **Deep Learning** *a.y. 2021/22 – present*
- **Computer Science Laboratory** *a.y. 2019/20 – present*

Co-supervision of Doctoral Theses

- **Emanuele Colonna** (*39th cycle*), project: "Study of AI techniques for efficient generation of digital humans and 3D environments", University of Bari Aldo Moro
- **Nicola Fanelli** (*39th cycle*), project: "Analysis and valorization of digitized artistic heritage using Artificial Intelligence techniques", University of Bari Aldo Moro
- **Pasquale De Marinis** (*38th cycle*), project: "Computer Vision techniques for sustainable AI through drones"
- **Raffaele Scaringi** (*38th cycle*), project: "Automatic analysis of artistic heritage via Artificial Intelligence", University of Bari Aldo Moro
- **Rosa Porro** (*37th cycle*), project: "Data Science approaches to support the design of crowd-funding campaigns", University of Bari Aldo Moro

Research Projects

Scientific Responsibility

- **PON R&I 2014–2020 "AIM"** *7/2019 – 9/2023*
  Beneficiary of a type A researcher contract on the PON project "AIM: Attraction and International Mobility", sector 09/H1, ING–INF/05, AIM 1852414, activity 3, line 1, CUP H95G18000140006 ATT 3, on the theme "Computational methods for cultural heritage". The nominal head of the project was Donato Malerba; however, I was completely autonomous in managing and directing the research, as well as administering a fund of €11,724.92 associated with the project

Participation in Projects

- **Horizon Europe Seeds** *2/2022 – 8/2023*
  Participant in the project "Multidisciplinary University Hub. Innovative processes for the digitization and enhancement of written cultural heritage", CUP H99J21017690006, in collaboration with the Department of Humanistic Research and Innovation

- **PRIN 2015 "HAND"** *7/2017 – 7/2019*
  Participant in the project "HAND: Handwriting Analysis against Neuromuscular Disease", CUP H96J16000820001, led by the University of Bari Aldo Moro, as a Research Fellow (1 year + 1)

Writing of Projects in Response to Calls for Proposals

- **RIPARTI**: Contribution to the drafting of the projects "MARVIN: Monitoring Adverse Reactions of anti–COVID vaccines" and "RAPIDITY: Precision farming with AI–enabled remotely piloted aircraft systems", presented in collaboration with the startup MIRACLE S.r.l. and the Aerospace Technology District (DTA), both admitted for funding

- **Horizon Europe Seeds**: Contribution to the writing of the project "Multidisciplinary University Hub. Innovative processes for the digitization and enhancement of written cultural heritage", in collaboration with the Department of Humanistic Research and Innovation, admitted for funding

Organization of Scientific Events

- **Workshop Organizer**: 4th ICCV Workshop on e-Heritage, in conjunction with ICCV 2023, Paris, France, October 2, 2023
  `https://www.cvl.iis.u-tokyo.ac.jp/e-Heritage2023/`

- **Workshop Organizer**: 3nd International Workshop on Fine Art Pattern Extraction and Recognition (FAPER 2023), in conjunction with ICIAP 2023, Udine, Italy, September 11, 2023
  `https://sites.google.com/view/faper2023`

- **Workshop Organizer**: 2nd International Workshop on Fine Art Pattern Extraction and Recognition (FAPER 2022), in conjunction with ICIAP 2021, Lecce, Italy, May 23, 2022
  `https://sites.google.com/view/faper2022`

- **Workshop Program Co-chair**: International Workshop on e-Heritage and Robotics, in conjunction with IROS 2021, Prague, Czech Republic, October 1, 2021
  `https://www.cvl.iis.u-tokyo.ac.jp/EHR2021`

- **Workshop Organizer**: International Workshop on Fine Art Pattern Extraction and Recognition (FAPER 2020), in conjunction with ICPR 2020, Milan, Italy, January 11, 2021
  `https://sites.google.com/view/faper-workshop`

- **Local Arrangement Chair**: 2020 IEEE Conference on Evolving and Adaptive Intelligent Systems (EAIS 2020), Bari, Italy, May 27-29, 2020

Service Activities

Member of Editorial Board

○ International Journal of Intelligent Systems – Wiley (*2022–current*)
○ Computational Intelligence and Neuroscience – Hindawi (*2021–2023*)

Guest Editorship

○ Journal of Imaging – MDPI (*2020/21*): Special Issue in "Fine Art Pattern Extraction and Recognition", co–editors: Giovanna Castellano, Fabio Bellavia
  `https://www.mdpi.com/journal/jimaging/special_issues/faper2020`

Awards and Grants

○ **Best Paper**: Awarded by the 18th Conference on Computer Science and Intelligence Systems (FedCSIS 2023) for the paper "Applying Knowledge Distillation to Improve Weed Mapping With Drones", September 19, 2023

○ **NVIDIA GPU Grant**: Donation from NVIDIA, shared with Fabrizio Balducci, of a Jetson TX2 to support research, August 7, 2018

○ **Best Presentation**: Awarded by the organizing committee of the 4th European Summer School on Fuzzy Logic and Applications (SFLA 2018), June 28, 2018

Main Recent Publications

1. Castellano, G., Esposito, A., Lella, E., Montanaro, G., Vessio, G., "Automated detection of Alzheimer's disease: a multi-modal approach with 3D MRI and amyloid PET", Scientific Reports, 14, 5210, Nature, ISSN: 2045-2322, `https://doi.org/10.1038/s41598-024-56001-9`, 2024

2. Castellano, G., De Marinis, P., Vessio, G., "Weed mapping in multispectral drone imagery using lightweight vision transformers", Neurocomputing, 562, 126914, Elsevier, ISSN: 0925-2312, `https://doi.org/10.1016/j.neucom.2023.126914`, 2023

3. Castellano, G., Cotardo, E., Mencar, C., Vessio, G., "Density-based clustering with fully-convolutional networks for crowd flow detection from drones", Neurocomputing, 526, 169–179, Elsevier, ISSN: 0925-2312, `https://doi.org/10.1016/j.neucom.2023.01.059`, `https://arxiv.org/abs/2301.04937`, 2023

4. Kaczmarek-Majer, K., Casalino, G., Castellano, G., Dominiak, M., Hryniewicz, O., Kamińska, O., Vessio, G., Díaz-Rodríguez, N., "PLENARY: Explaining black–box models in natural language through fuzzy linguistic summaries", Information Sciences, 614, 374–399, Elsevier, ISSN: 0020-0255, `https://doi.org/10.1016/j.ins.2022.10.010`, 2022

5. Castellano, G., Vessio, G., "A Deep Learning Approach to Clustering Visual Arts", International Journal of Computer Vision, 130(11), 2590–2605, Springer, ISSN: 1573-1405, `https://doi.org/10.1007/s11263-022-01664-y`, `https://arxiv.org/abs/2106.06234`, 2022

6. Castellano, G., Digeno, V., Sansaro, G., Vessio, G., "Leveraging Knowledge Graphs and Deep Learning for automatic art analysis", Knowledge-Based Systems, 248, 108859, Elsevier, ISSN: 0950-7051, `https://doi.org/10.1016/j.knosys.2022.108859`, 2022

7. Mazzolini, D., Mignone, P., Pavan, P., Vessio, G., "An easy-to-explain decision support framework for forensic analysis of dynamic signatures", Forensic Science International: Digital Inves-

TIGATION, 38, 301216, Elsevier, ISSN: 2666-2817, `https://doi.org/10.1016/j.fsidi.2021.301216`, 2021

8. Diaz, M., Moetesum, M., Siddiqi, I., Vessio, G., "Sequence-based dynamic handwriting analysis for Parkinson's disease detection with one-dimensional convolutions and BiGRUs", EXPERT SYSTEMS WITH APPLICATIONS, 168, 114405, Elsevier, ISSN: 0957-4174, `https://doi.org/10.1016/j.eswa.2020.114405`, `https://arxiv.org/abs/2101.09461`, 2021

9. Castellano, G., Lella, E., Vessio, G., "Visual link retrieval and knowledge discovery in painting datasets", MULTIMEDIA TOOLS AND APPLICATIONS, 80(5), 6599–6616, Springer, ISSN: 1380-7501, `https://doi.org/10.1007/s11042-020-09995-z`, `https://arxiv.org/abs/2003.08476`, 2021

10. Lella, E., Vessio, G., "Ensembling complex network 'perspectives' for mild cognitive impairment detection with artificial neural networks", PATTERN RECOGNITION LETTERS, 136, 168–174, Elsevier, ISSN: 0167-8655, `https://doi.org/10.1016/j.patrec.2020.06.001`, `https://arxiv.org/abs/2101.10629`, 2020

11. Diaz, M., Ferrer, M. A., Impedovo, D., Pirlo, G., Vessio, G., "Dynamically enhanced static handwriting representation for Parkinson's disease detection", PATTERN RECOGNITION LETTERS, 128, 204–210, Elsevier, ISSN: 0167-8655, `https://doi.org/10.1016/j.patrec.2019.08.018`, 2019