# Alberto G. Valerio

Academic Curriculum Vitae

*PhD Candidate in Digital Innovation and e-Health*
*Department of Computer Science • University of Bari "Aldo Moro", Bari, Italy*

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## RESEARCH PROFILE

Ph.D. candidate in Digital Innovation and e-Health at the University of Bari "Aldo Moro", an interdisciplinary doctoral program spanning computer science and medicine. My research lies at the intersection of deep learning, computer vision, and large language models for medical imaging, with a particular focus on explainable AI and multimodal learning. I develop interpretable models for neuroimaging applications, including brain tumor segmentation and early detection of Alzheimer's disease, with the goal of supporting clinical decision-making in precision and preventive medicine.

## EDUCATION

2024 – present
**PhD in Digital Innovation and e-Health**
University of Bari "Aldo Moro" — Department of Computer Science
Thesis: *Explainability of Artificial Intelligence systems for applications in the medical field.*
Supervisor: Dr. Gabriella Casalino, Prof. Giovanna Castellano

2022 – 2024
**MSc in Computer Science — Artificial Intelligence Track** *(110/110 cum laude, special mention)*
University of Bari "Aldo Moro"
Thesis: *Visual and textual explainability in brain tumor detection from MR imaging.*
Advisor: Dr. Gennaro Vessio, Prof. Giovanna Castellano

2019 – 2022
**BSc in Computer Science and Technologies for Software Production** *(110/110 cum laude)*
University of Bari "Aldo Moro"
Thesis: *Machine learning based analysis and techniques for sales forecasting on M5 Walmart dataset.*
Advisor: Dr. Gabriella Casalino, Prof. Corrado Mencar

## POSITIONS & AFFILIATIONS

2024 – present
**Member, Computational Intelligence Laboratory (CILAB)**
Department of Computer Science, University of Bari "Aldo Moro"
Research topics: explainable AI, deep learning, medical imaging, neuroimaging

2026
**Research Visit (PhD mobility)**
Poznan University of Medical Sciences, Poznań, Poland
Collaboration with Prof. Katarzyna Kaczmarek-Majer and Dr. Michał Chojnicki

2025 – present
**Member, International Neural Network Society (INNS)**
Professional scientific society

2025 – present
**Member, Italian National Group for Scientific Computing (GNCS)**
National Institute for Advanced Mathematics (INdAM)

## PUBLICATIONS

**Peer-reviewed journal articles**

[1] **A. G. Valerio**, K. Trufanova, S. de Benedictis, G. Vessio, and G. Castellano. "From segmentation to explanation: Generating textual reports from MRI with LLMs". In: *Computer Methods and Programs in Biomedicine* 270 (Oct. 2025), p. 108922. ISSN: 0169-2607. DOI: 10.1016/j.cmpb.2025.108922.

#### Conference proceedings

[2] G. Castellano, E. Colonna, N. Fanelli, L. Laraspata, I. Rinaldi, **A. G. Valerio**, and G. Vessio. "Generative AI Across Modalities: Insights from Our Research on Domain-Aware Content". In: *Joint Proceedings of the Thematic Workshops at Ital-IA 2025*. Vol. 4121. CEUR Workshop Proceedings. Trieste, Italy: CEUR-WS.org, June 2025. URL: https://ceur-ws.org/Vol-4121/Ital-IA_2025_paper_35.pdf.

[3] G. Casalino, G. Castellano, **A. G. Valerio**, G. Vessio, and G. Zaza. "Enhancing the Explainability of Neuro-Fuzzy Systems with Large Language Models: A Case Study on EEG-Based Epileptic Seizure Classification". In: *2025 International Joint Conference on Neural Networks (IJCNN)*. IEEE, June 2025, pp. 1–8. DOI: 10.1109/ijcnn64981.2025.11229163.

[4] G. Casalino, G. Castellano, D. Margherita, **A. G. Valerio**, G. Vessio, and G. Zaza. "Exploring the Expressive Power of Large Language Models in Neuro-Fuzzy System Explainability: A Study on EEG-Based Seizure Detection". In: *Proceedings of the Second Workshop on Explainable Artificial Intelligence for the Medical Domain*. Vol. 4059. CEUR Workshop Proceedings. CEUR-WS.org, 2025. URL: https://ceur-ws.org/Vol-4059/paper15.pdf.

#### Book chapters & books

[5] G. Spillo, **A. G. Valerio**, F. Franchini, A. De Filippo, C. Musto, M. Milano, and G. Semeraro. "RecSys CarbonAtor: Predicting Carbon Footprint of Recommendation System Models". In: *Recommender Systems for Sustainability and Social Good*. Springer Nature Switzerland, 2025, pp. 98–110. ISBN: 9783031876547. DOI: 10.1007/978-3-031-87654-7_10.

## CONFERENCE PRESENTATIONS

2025 — **Enhancing the Explainability of Neuro-Fuzzy Systems with Large Language Models: A Case Study on EEG-Based Epileptic Seizure Classification**
IJCNN2025 - International Joint Conference on Neural Networks — Rome, Italy
Oral presentation

2025 — **Explainability of Artificial Intelligence systems for applications in the medical field**
DeepLearn2025 - 12th International School on Deep Learning — Porto - Maia, Portugal
Oral presentation

## GRANTS, AWARDS & HONORS

2024 – present — **PhD Fellowship (Merit-based)**
Digital Innovation and e-Health PhD Programme, University of Bari "Aldo Moro"
Co-funded by Bristol Myers Squibb S.r.l.

## TEACHING

2025 — **Seminar — *An Introduction to Large Language Models***
BSc in Computer Science and Digital Communication, University of Bari "Aldo Moro"
Course: Intelligent Systems for Digital Communication 5-hour seminar

## ACADEMIC SERVICE

2025 – present — **Reviewer**
International conferences and journals in artificial intelligence and medical imaging

2025 **Program Committee Member**
EXPLIMED — Second Workshop on Explainable Artificial Intelligence for the Medical Domain
European Conference on Artificial Intelligence (ECAI)

## TECHNICAL SKILLS

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|---|---|
| **Methods** | Deep learning, computer vision, graph neural networks, explainable AI, large language models, multimodal learning, medical image analysis |
| **Software** | Python, PyTorch, MONAI, TensorFlow, scikit-learn, NumPy, Git, Linux, Docker, LaTeX |
| **Languages** | Italian (native) English (professional) |

## REFERENCES

Available upon request.

In compliance with the Italian Personal Data Protection Code (Legislative Decree No. 196/2003) and the EU Regulation 2016/679 (GDPR), I authorize the processing of my personal data contained in this curriculum vitae for academic evaluation and recruitment purposes.

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