

MARIA CHIARA FIORENTINO

Curriculum vitae - maggio 2023

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1 PERSONAL DATA

Cittadinanza: Italiana
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Data e luogo di nascita: 18 giugno 1992 - Ancona (AN), Italia
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2 CURRENT POSITION

From 01/2023: Post-doctoral researcher at Università Politecnica delle Marche-Department of Information Engineering.

3 EDUCATION

03/2023: **European PhD in Computer, Management and Automation Engineering**
Department of Information Engineering, Università Politecnica delle Marche Ancona, Italy
Thesis title: "DL4US: Unlocking the potential of deep learning for ultrasound image analysis in gynecology"

and rheumatology”

Supervisor: Prof. Emanuele Frontoni, Dr. Sara Moccia

Period: from 2019 to 2023

Grade: cum laude

From 8/2022 al 10/2022: **Visiting PhD**

Digital Health & Biomedical Technologies, Vicomtech, Spain

Supervisor: PhD. Karen Lopez-Linares Roman, PhD Iván Macía Oliver

From 3/2022 al 8/2022: **Visiting PhD**

Scuola Superiore Sant’Anna, Italy

Supervisor: Dr. Sara Moccia

From 3/2021 al 8/2021: **Visiting PhD**

Esaote S.p.a, Italy

Supervisor: PhD. Luca Zini

07/2018: **Master Degree in Biomedical Engineering**

Department of Information Engineering, Università Politecnica delle Marche Ancona, Italy

Thesis title: ”Upper limbs dyskinesia detection and classification for patients with Parkinson’s disease”

Supervisor: PhD. Lucio Ciabattini, Prof. Andrea Monteriù

Period: from 2015 to 2018

Grade: 110/110 cum laude

4 WORK EXPERIENCE

From 01/2023 **Post-doctoral Researcher**

Università Politecnica delle Marche Ancona, Italy. Activities: Activities of scientific research, teaching, organizational activities, and technology transfer (third mission). Advisor: Prof. Adriano Mancini.

From 2/2019 to 9/2019 **Research Fellow**

Università Politecnica delle Marche Ancona, Italy. Activities: Activities of scientific research, teaching, organizational activities, and technology transfer (third mission). Advisor: Prof. Emanuele Frontoni.

From 09/2018 to 02/2019 **Research Intern**

Image processing division of LUMC’s radiology Department. Activities: Use of Deep Learning methodologies for myocardial and left ventricular cavity segmentation in 3D cine MRI images.

5 TEACHING SUPPORT ACTIVITIES

1. Projects Tutor at Università Politecnica delle Marche for Computer Vision and Deep Learning course held by Emanuele Frontoni) (2020/2021/2022)
2. Lecturer at Deep learning - Artificial intelligence - Natural linguistic processing held by IFOA DataLab (06/2020)
3. Teacher Assistant at LUISS for the course Customer Intelligence e Logiche di Analisi dei Big Data, formal appointment (09/2022 - 12/2022)

6 INVITED SPEAKER FOR MSc OR PhD COURSES

1. Lecturer for the seminar ”Machine learning per l’analisi delle immagini mediche” during the course ”Laboratorio di Elaborazione di Bioimmagini” at Biomedical Engineering Master Degree, Politec-

nico di Milano (4 hours) (academic year 2022/2023)

2. Lecturer for doctoral course "Deep learning for medical image analysis" at 'Istituto di Biorobotica della Scuola Superiore Sant'Anna di Pisa (4 hours) /academic year (2021/2022)

7 SCIENTIFIC PUBLICATIONS - INDEXES

H-index: 5 Citations: 72 (Source: Scopus)

H-index: 6 Citations: 92 (Source: Google Scholar)

Totale pubblicazioni su rivista: **7**

Di cui

a primo nome: **3**

a secondo nome: **3**

8 GRANT

2023: IS CRA Class C project grant winner <https://www.hpc.cineca.it/services/isra>

9 AWARDS

2019: **Paolo Marziali Award**. The award (500 euro) is assigned during the graduation ceremonies for the best master thesis in e-health.

10 EDITORIAL ACTIVITIES

2023: **Topic Editor** for Artificial Intelligence in Rheumatology and Musculoskeletal Diseases in *Frontiers in Medicine*

11 SCIENTIFIC PUBLICATIONS

JOURNALS

- [1] **Fiorentino, Maria Chiara**, S. Moccia, M. Capparuccini, S. Giamberini, and E. Frontoni. "A regression framework to head-circumference delineation from US fetal images". In: *Computer methods and programs in biomedicine* 198 (2021), p. 105771.
- [2] **Fiorentino, Maria Chiara**, F. P. Villani, M. Di Cosmo, E. Frontoni, and S. Moccia. "A review on deep-learning algorithms for fetal ultrasound-image analysis". In: *Medical Image Analysis* (2022), p. 102629.
- [3] G. Smerilli, E. Cipolletta, G. Sartini, E. Moscioni, M. Di Cosmo, **Fiorentino, Maria Chiara**, S. Moccia, E. Frontoni, W. Grassi, and E. Filippucci. "Development of a convolutional neural network for the identification and the measurement of the median nerve on ultrasound images acquired at carpal tunnel level". In: *Arthritis Research & Therapy* 24.1 (2022), p. 38.
- [4] S. Moccia, **Fiorentino, Maria Chiara**, and E. Frontoni. "Mask-R 2 CNN: a distance-field regression version of Mask-RCNN for fetal-head delineation in ultrasound images". In: *International Journal of Computer Assisted Radiology and Surgery* 16.10 (2021), pp. 1711–1718.

- [5] E. Cipolletta, **Fiorentino, Maria Chiara**, S. Moccia, I. Guidotti, W. Grassi, E. Filippucci, and E. Frontoni. “Artificial intelligence for ultrasound informative image selection of metacarpal head cartilage. A pilot study”. In: *Frontiers in Medicine* 8 (2021), p. 589197.
- [6] **Fiorentino, Maria Chiara**, E. Cipolletta, E. Filippucci, W. Grassi, E. Frontoni, and S. Moccia. “A deep-learning framework for metacarpal-head cartilage-thickness estimation in ultrasound rheumatological images”. In: *Computers in Biology and Medicine* 141 (2022), p. 105117.
- [7] M. Di Cosmo, **Fiorentino, Maria Chiara**, F. P. Villani, E. Frontoni, G. Smerilli, E. Filippucci, and S. Moccia. “A deep learning approach to median nerve evaluation in ultrasound images of carpal tunnel inlet”. In: *Medical & Biological Engineering & Computing* 60.11 (2022), pp. 3255–3264.

PROCEEDINGS

- [1] G. Belgiovine, M. Capecci, L. Ciabattini, **Fiorentino, MC**, A. Montcriù, L. Pepa, and L. Romeo. “Upper Limbs Dyskinesia Detection and Classification for Patients with Parkinson’s Disease based on Consumer Electronics Devices”. In: *2018 Zooming Innovation in Consumer Technologies Conference (ZINC)*. IEEE. 2018, pp. 156–157.
- [2] L. Migliorelli, S. Moccia, I. Avellino, **Fiorentino, Maria Chiara**, and E. Frontoni. “MyDi application: Towards automatic activity annotation of young patients with Type 1 diabetes”. In: *2019 IEEE 23rd International Symposium on Consumer Technologies (ISCT)*. IEEE. 2019, pp. 220–224.
- [3] A. Agostinelli, G. Belgiovine, **Fiorentino, MC**, G. Turri, A. Sbroolini, L. Burattini, M. Morettini, F. Di Nardo, S. Fioretti, and L. Burattini. “Association between accelerations and decelerations of fetal heart rate”. In: *EMBECE & NBC 2017: Joint Conference of the European Medical and Biological Engineering Conference (EMBECE) and the Nordic-Baltic Conference on Biomedical Engineering and Medical Physics (NBC), Tampere, Finland, June 2017*. Springer. 2018, pp. 1125–1128.
- [4] **Fiorentino, Maria Chiara**, S. Moccia, E. Cipolletta, E. Filippucci, and E. Frontoni. “A learning approach for informative-frame selection in US rheumatology images”. In: *New Trends in Image Analysis and Processing–ICIAP 2019: ICIAP International Workshops, BioFor, PatReCH, e-BADLE, DeepRetail, and Industrial Session, Trento, Italy, September 9–10, 2019, Revised Selected Papers 20*. Springer. 2019, pp. 228–236.
- [5] M. Di Cosmo, **Fiorentino, Maria Chiara**, F. P. Villani, G. Sartini, G. Smerilli, E. Filippucci, E. Frontoni, and S. Moccia. “Learning-based median nerve segmentation from ultrasound images for carpal tunnel syndrome evaluation”. In: *2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)*. IEEE. 2021, pp. 3025–3028.

All that has been declared corresponds to the truth according to articles 43 and 44 46 e 47 del D.P.R. n. 445/2000

Handwritten signature: Maria Chiara