Lorella Bottino

Address: Italy (Work)

EDUCATION AND TRAINING

2022
THIRD YEAR PHD STUDENT IN TRANSLATIONAL RESEARCH AND INNOVATIVE TECHNOLOGIES APPLIED TO NUTRITION AND PREDICTIVE AND PRECISION MEDICINE University Magra Graecia of Catanzaro

RESEARCH PROJECT TITLE : PROJECT, DEVELOPMENT OF A SOFTWARE PLATFORM FOR THE ANALYSIS OF CLINICAL DATA USING ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING TECHNIQUES WITH APPLICATIONS IN PREDICTIVE AND PRECISION MEDICINE

RESEARCH PROJECT GOAL : DEVELOPING A SOFTWARE SYSTEM WHICH, STARTING FROM A PHOTO TAKEN WITH THE SMARTPHONE, IS ABLE TO QUANTIFY THE ASYMMETRIES OF SCOLIOSIS AND MONITOR THEIR PROGRESSION/REGRESSION

2021 – 2022
SECOND LEVEL MASTER IN CLINICAL ENGINEERING AND MEDICAL DEVICES Alma Mater Studiorum University of Bologna

Thesis State of the art and evolution of medical software in diagnostic imaging

2018 – 2021 CATANZARO
MASTER OF SCIENCE (M.SC.) IN BIOMEDICAL ENGINEERING University Magra Graecia of Catanzaro

Thesis Stability analysis of radiomics features in magnetic resonance images

2011 – 2017 CATANZARO
BACHELOR DEGREE IN INFORMATICS AND BIOMEDICAL ENGINEERING University Magra Graecia of Catanzaro

Thesis Development of an orthopedic aligner for correct screw insertion under fluoroscopy

ISCRITTA ALL'ORDINE DEGLI INGEGNERI DI COSENZA (NUMERO DI ISCRIZIONE 7056), SEZIONE A, INGEGNERE DELL'INFORMAZIONE

ISCRITTA COME SOCIO ORDINARIO AIIC

STAGISTA PRESSO LA SOCIETA' E-WAY S.R.L. DI COSENZA PER UN PERIODO DI 6 MESI (FEBBRAIO 2024-LUGLIO 2024)

TUTORATO NELL'INSEGNAMENTO ING-INF/05 SISTEMI OPERATIVI, RETI E PROGRAMMAZIONE PRESSO LA SCUOLA DI MEDICINA E CHIRURGIA , UNIVERSITA' MAGNA GRAECIA DI CATANZARO , ANNO 2022/2023

STAGISTA ALL'ESTERO PRESSO LA BRUNEL UNIVERSITY LONDON (GENNAIO 2025- AD OGGI)

PUBLICATIONS

Bottino, L., Settino, M., & Cannataro, M. (2022, August). Scoliosis management through apps. In Proceedings of the 13th International Conference on Bioinformatics, Computational Biology and Health Informatics (pp. 1-4) DOI: 10.1145/3535508.3545592

Bottino, L., Settino, M., Promenzio, L., & Cannataro, M. (2023). Scoliosis Management through Apps and Software Tools. International Journal of Environmental Research and Public Health, 20(8):5520 DOI: 10.3390/ijerph20085520

Bottino, L., Settino, M., & Cannataro, M. (2023, March). Distributed ICT solutions for scoliosis management. In 2023 31st Euromicro International Conference on Parallel, Distributed and Network-Based Processing (PDP) (pp. 258-262). IEEE. DOI: 10.1109/PDP59025.2023.00047

Bottino, L., Cannataro, M. (2023). Towards a nutritional profile of individuals: nutritional, metabolic and nutrigenomic data, and related bioinformatic methods. In 19th Annual Meeting of the Bioinformatics Italian Society, BITS 2023, June 21-23, 2023, Bari.

Bottino, L., Settino, M. (2023). Deep learning for scoliosis diagnosis: methods and databases. In the 4th International Conference and Summer School Numta 2023: "Numerical Computations: Theory and Algorithms.

L. Bottino and M. Cannataro, "Explanation of machine learning models for predicting obesity level using Shapley values," 2023 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Istanbul, Turkiye, 2023, pp. 3288-3291, doi: 10.1109/BIBM58861.2023.10385994.

L.Bottino, "An application for scoliosis screening and follow-up: a first proposal," 2024 28th European Conference, ADBIS 2024, Bayonne, France, August 28-31, 2024

L.Bottino and M.Cannataro, "Proposal for an application for scoliosis screening and follow-up," Late Summer AMALEA, 5th International Workshop on Advances & Applications of Machine Learning & AI, Cetraro, Italy, June 9-15, 2024

L. Bottino, P. Cinaglia and M. Cannataro, "An information system for cataloging and annotating images of scoliosis," 2024 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Lisbon, Portugal, 2024, pp. 5848-5851, doi: 10.1109/BIBM62325.2024.10822386.

Bottino, L., Settino, M., Cannataro, M. (2024). Artificial Intelligence. In: Familiari, F., Galasso, O., Gasparini, G. (eds) Artificial Intelligence in Orthopaedic Surgery Made Easy. Springer, Cham. https://doi.org/10.1007/978-3-031-70310-2_2

SKILLS

Microsoft Office | Microsoft Excel | Microsoft Powerpoint | Microsoft Word | Python Language - Basic knowledge | programming: Python, MATLAB and SQL

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user

HOBBIES AND INTERESTS

SPORT

FIN registered Master M30 category

DRIVING LICENCE

Driving Licence: B

WINTER/SUMMER SCHOOL

Deep Learn 2023 8 th International School on Deep Learning, 16-20 January 2023, Bournemouth, United Kingdom

24 th Bologna Winter School Bioinformatics and deep learning for biodata analysis February 2023

International Doctoral Summer School on AI, big data and management (IDSS Southern) 11-14 Giugno 2024, Paestum (Salerno)

RESEARCH

Summary of research program

My research project concerns the study, design and implementation of an algorithm that is able to automatically predict the asymmetries and slopes characteristic of adolescent idiopathic scoliosis.
Scoliosis is a deviation of the spine in the frontal plane.
The gold standard for diagnosing scoliosis is x-ray which is an internal photograph and is used to quantify the Cobb angle.
However, scoliosis is an evolutionary pathology, that is, it tends to worsen during the period of skeletal development, and it is precisely in this period that it requires maximum vigilance.
The main objective of my project is to give families the opportunity to take measurements at home in a simple, non-invasive, zero-cost and accurate way, so that scoliosis can be monitored constantly over time.
Through the use of the camera, a simple application that can be downloaded onto the smartphone captures the patient's body and acquires an image. This image is transmitted in real time to a central computer. The server draws the points, measures the relative angles and distances and sends them back to the app which displays them in real time.
Such a system represents an important support not only for families who cannot go to the reference medical centers on time, but also for the doctor himself who in this way will be able to manage multiple patients in parallel and remote monitoring.

DICHIARAZIONE

Consapevole che le dichiarazioni false comportano l'applicazione delle sanzioni previste dal D.P.R. 445/2000, dichiaro che le informazioni riportate nel curriculum vitae corrispondono a verità