Alessandra Bernardini

Curriculum Vitae

Dipartimento di Ingegneria
dell'Energia Elettrica
e dell'Informazione - DEI

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Personal informations

First name	Alessandra
Last name	Bernardini
Place and date of birth	Urbino (Italy), March 26, 1997
Nationality	Italian
Position	PhD student
Affiliation	Dipartimento di Ingegneria dell'Energia Elettrica e dell'Informazione - DEI
E-mail	alessandr.bernardin5@unibo.it

Education

October 2023 - ongoing — **Visiting Student Researcher at Stanford**, *Biomimetic and Dexterous Manipulation Lab - BDML*, under the supervision of Professor Mark Cutkosky

November 2021-ongoing — **PhD student in Robotics**, University of Bologna, Italy

October, 2021 — **Master Degree in Automation Engineering**, University of Bologna, Italy
Thesis: *Extraction of Grasping Motions from sEMG Signals for the Control of Robotic Hands through Autoencoding.*
Supervisor: Professor Claudio Melchiorri
Final grade: 110/110 with honors

October, 2019 — **Bachelor Degree in Automation Engineering**, University of Bologna, Italy
Thesis: *Controllo di mani robotiche basato su elettromiografia: sviluppo di un modello del segnale sEMG per la simulazione di algoritmi di decodifica dell'intento.*
Supervisor: Professor Claudio Melchiorri
Final grade: 110/110 with honors

2011 − 2016 — **High School Diploma in Scientific Studies**, Liceo Scientifico G.Torelli
Final grade: 100 with honors

Research Interests

The main research fields I'm interested in are Robotics, Human Robot Interaction, Robot Control, Robotic Hands, Deep Learning

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Honours and awards

2021 — *Scholarship for deserving students enrolled in the academic year 2020/2021 to study courses of the University of Bologna*

University of Bologna

2019   *Scholarship for deserving students enrolled in the academic year 2018/2019 to study courses of the University of Bologna*

University of Bologna

Publications

1. R. Meattini, A. Bernardini, G. Palli and C. Melchiorri, *"sEMG-Based Minimally Supervised Regression Using Soft-DTW Neural Networks for Robot Hand Grasping Control*," in IEEE Robotics and Automation Letters, vol. 7, no. 4, pp. 10144-10151, Oct. 2022, doi:10.1109/LRA.2022.3193247.

2. A. Bernardini, R. Meattini, G. Palli and C. Melchiorri, *"Simulative and Experimental Evaluation of a Soft-DTW Neural Network for sEMG-Based Robotic Grasping*," in: Borja, P., Della Santina, C., Peternel, L., Torta, E. (eds) Human-Friendly Robotics 2022. HFR 2022. Springer Proceedings in Advanced Robotics, vol 26. Springer, Cham. doi:10.1007/978-3-031-22731-8_15.

3. R. Meattini, A. Caporali, A. Bernardini, G. Palli and C. Melchiorri, *"Self-Supervised Regression of sEMG Signals Combining Non-Negative Matrix Factorization With Deep Neural Networks for Robot Hand Multiple Grasping Motion Control*," in IEEE Robotics and Automation Letters, vol. 8, no. 12, pp. 8533-8540, Dec. 2023, doi: 10.1109/LRA.2023.3329764.

Schools and Conferences attended

July 14 - 17, 2021	**Summer School SIDRA**, Bertinoro
July 4 - 9, 2022	**Summer School SIDRA**, Bertinoro
September 1 - 3, 2022	**Automatica.it**, Cagliari
September 22 - 23, 2022	**15th International Workshop on Human-Friendly Robotics**, Delft, The Netherlands
October 23 - 27, 2022	**International Conference on Intelligent Robots and Systems - IROS**, Kyoto, Japan

Computer skills

C Language / Python / Robot operating system - ROS / MATLAB&Simulink / CodeSys IEC 61131-3 automation software

Languages

Italian	Mothertongue
English	Advanced – C1