Curriculum sintetico in inglese (Last update February 2025)

Federica Ferraguti received the Master degree in Management Engineering from the University of Modena and Reggio Emilia in 2011 (110/110 summa cum laude). In March 2015 she received the Ph.D. in Industrial Innovation Engineering from the University of Modena and Reggio Emilia, with a thesis titled: "Interaction control for autonomous robotic surgery". In 2013 she was visiting researcher at the Rehabilitation Engineering Lab of the University ETH in Zurich (Switzerland) to develop the control architecture and the teleoperation system of a surgical robot.

Currently, she is an Associate Professor SSD IINF-04/A Automatica at the Department of Sciences and Methods for Engineering (Dipartimento di Scienze e Metodi dell'Ingegneria) of the University of Modena and Reggio Emilia.

Her main research activities focus on the following areas:

- Control of robotic systems
- Surgical robotics
- Collaborative robotics and human-robot interaction
- Teleoperation
- Strategies for learning from demonstration
- Virtual reality and augmented reality
- Artificial intelligence applied to robotic systems

She is inventor in 5 patent applications field since 2017 to 2024.

She was involved into the European project – Intelligent Surgical Robotics (Settimo Programma Quadro, reference n. 270396, 2011-2014) aimed at the analysis and development of a robotic system to autonomously perform surgical operations. She was involved in the National project Cluster Nazionale Fabbrica Intelligente – Adaptive Manufacturing whose goal was the development of technologies and solutions for the factories in order to improve their flexibility and efficiency. She was involved as a WP leader into the European projects Symplexity (H2020, project 637080) to develop a collaborative robotic solution for polishing, SARAS (H2020, project 779813) to develop a robotic platform for allowing a single surgeon to execute R-MIS operations. Finally, she was involved in the project INCLUSIVE (H2020, project 723373) that aims to develop a new concept of interaction between the user and the machines in which the behaviour of the automation system adapts to the human capabilities.

She was the winner of the 2023 Italian Science Fund (FIS2) grant with the project "TRAMIS - Trustworthy Robotic Assistant for Improved Minimally Invasive Surgery" aimed at developing an autonomous robotic system that can provide support to the surgeon during minimally invasive surgical procedures performed manually or robot-assisted. She is currently co-Principal Investigator of the PRIN 2022 project "Predictive modeling of Omics biomarkers in temporal lobe Epilepsy: a comprehensive multidisciplinary and Translational Approach from rodents to humans (POETA)" and was Principal Investigator of the FAR 2022 project "Robotic-assisted percutaneous nephrolithotomy with ultrasound guidance and 3D reconstruction superimposition".

She was teacher assistant in the course of Automatic Controls at the Management Engineering and Mechatronics Engineering Courses of Study. In the AA 2016-2017 she was teacher of the course Systems Theory at the Computer Science Engineering Course of Study and teacher at the Ph.D. course "Collaboration and cooperation in industrial robotics" organized by the Department of Sciences and Methods for Engineering. Then, she was teacher of the courses Automation and Robotics and Smart Robotics at the Computer Science Engineering Course of Study and of the course of Industrial and Collaborative Robotics at the Management Engineering Course of Study.

Currently, she is teacher of the courses Automatic Control, Industrial and Collaborative Robotics and Collaborative Robotics at the Courses of Study in Management Engineering, Digital Automation Engineering and Tecnologie per l'Industria Intelligente, respectively.

Currently she is Member of the Faculty Board in Ph.D. program of national interest in Robotics and Intelligent Machines and in the Ph.D. Course in Industrial Innovation Engineering.

In 2017 she received the "Fabrizio Flacco Young Author Best Paper Award 2017" from the IEEE Robotics and Automation Society - Italian Chapter.

She publishes papers in the robotics and automation fields, in particular IEEE Transactions on Robotics, IEEE Transactions on Mechatronics Journal of Medical Robotics Research and International Journal of Advanced Robotic Systems. She participated and still join the international conferences such as the IEEE International Conference on Robotics and Automation and IEEE International Conference on Intelligent Robots and Systems.

Currently, she is Associate Editor for IEEE Robotics and Automation Letters and IEEE Transactions on Medical Robotics and Bionics.