

**Early Stage Researcher (PhD candidate) – Marie Skłodowska-Curie Action  
Assessment of human-machine interfaces of social and collaborative robots**

**Position Details**

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**Position Title:** ESR #2 - Assessment of human-machine interfaces of social and collaborative robots

**Project:** European Training Network for Industry Digital Transformation across Innovation Ecosystems – EINST4INE (funded by the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 956745).

**Field of Expertise:** BioRobotics

**Faculty / Research Group:** The BioRobotics Institute, Scuola Superiore Sant'Anna

**Employment type:** Full-time, fixed-term (36 months)

**Gross annual salary:** Estimated to 48,166.56 euros – additional family allowance based on personal circumstances may apply

**Starting date:** 1<sup>st</sup> September 2021

**Location:** Pisa (Italy)

- Full-time, 36-months fixed-term contract based at Scuola Superiore Sant'Anna but may be required to work remotely
- International mobility: various short and long-term travel foreseen, including industry and academic secondments
- Open to any nationality (requires a work permit for Italy)
- Research activities focusing on biorobotics
- Enrolment as a PhD candidate
- Opportunities to conduct innovative research activities in collaboration with high level academic and industrial partners
- Competitive remuneration

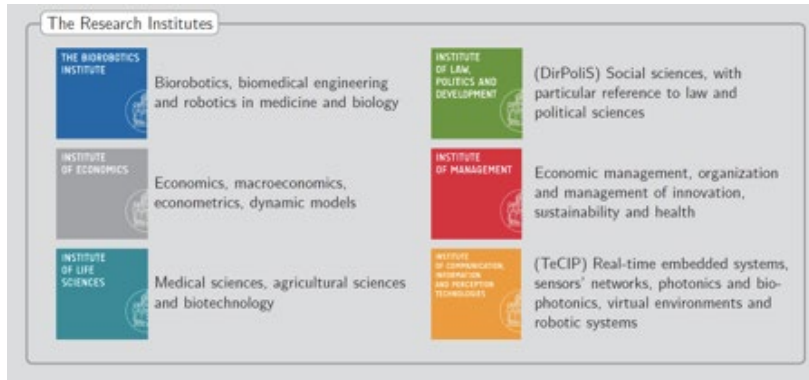
**About us**

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Sant'Anna School is one of the five Italian special statute public university institutions, holding a unique position within the Italian higher education system, which carries out research and education in applied sciences.

Scientific research and advanced education (PhDs, Post-Graduate Degrees and master's Degrees) are provided by 6 research institutes.





The PhD in BioRobotics is among the largest doctoral schools worldwide in robotics and biomedical engineering, with 100+ PhD students enrolled. Doctoral research projects are carried out in very well equipped, state-of-the-art laboratories, in such fields as prosthetic, surgical, therapeutic and healthcare robotics, bioengineering, biomimetics, micro- and nano-technology, soft robotics. As related to the EINST4INE project, the Neuro-Robotic Touch Lab and the Surgical Robotics and Allied Technologies Area will be actively involved.

### **About the position**

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The PhD position is part of the Marie Skłodowska-Curie Action "European Training Network for Industry Digital Transformation across Innovation Ecosystems" (EINST4INE), coordinated by RMIT Europe. EINST4INE project aims to develop new concepts, approaches and methods in the area of digital transformation and brings together a unique group of world-leading experts in the areas of Open Innovation, Industry 4.0, digital transformation and innovation ecosystems. EINST4INE six academic beneficiaries will recruit altogether 15 Early Stage Researchers (ESRs) working in the domain of industrial digital transformation who will meet regularly via a coordinated exchange programme organised across the international network, comprising secondments, visits, training events, workshops, and summer schools. The successful candidate will be based at Scuola Superiore Sant'Anna (Pisa, Italy) and enrolled in a PhD programme in this institution. For more information about EINST4INE project, visit our website: <https://www.einst4ine.eu/>

### **PhD Project Description**

**Title:** Assessment of human-machine interfaces of social and collaborative robots

**Description:** Robots are nowadays integrating capabilities which were not available in the recent past. The major change is the ability to have the robot share the workspace and tasks with humans, allowing to cooperate and act in society. A major subsystem of a social/collaborative robot is the human-machine interface, which may be grounded on different sensory modalities to exchange information. State of the art interfaces typically are speech-based, touch-based, or vision-based or combinations of these to allow interpreting, imitating or complementing the gestures of the user. The research will explore the interaction and complementarities between automation (including social/collaborative robots) and human machine cooperation. This ESR project will explore and pilot novel approaches to digitize human work and their effects on individual and organizational performance.



### Research field(s)

BioRobotics

### Supervisors

EINST4INE research programs involve comprehensive, independent research under the supervision of an expert supervising team. For the current position, these are:

- Prof. Dr. Calogero Maria Oddo, main supervisor
- Prof. Dr. Arianna Menciassi

### **Candidate Profile**

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#### Background

The ideal candidate should have educational background in engineering (any engineering field, preferably with a major in robotics & AI, electronics, mechanics, mechatronics, biomedical engineering or computer engineering) or computer science, physics, materials science, mathematics, or cognitive sciences. Other backgrounds will be considered based on personal qualification and complementary experiences.

Furthermore, the candidate should demonstrate attitude to collaboration and team working within multidisciplinary groups.

#### Qualifications

Candidates should have a master's degree (MSc). No limitation is formally set for the MSc degree and any background will be considered based on personal qualification and complementary experiences. Master Business Administration are not a valid qualification. Professional experience is an asset but not formally required.

English proficiency is required (at least B2 level).

### **Eligibility and Key Selection Criteria**

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To be eligible, you need to be an “Early Stage Researcher”, simultaneously fulfil the following criteria at the time of recruitment:

- **Mobility:** candidates must not have resided or carried out their main activity (work, studies, etc...) in Italy for more than 12 months in the 3 years immediately prior to recruitment under the EINST4INE project (i.e. from August 2018).
- **Qualification:** candidates must hold a degree that formally entitles them to embark on a doctorate, either in the country in which the degree was obtained or in the country in which the research training is provided (typically a master's degree – MSc).
- **Research experience:** at the date of recruitment, candidates must be in the first four years of their research career, after the master's degree was awarded.
- **Candidates must be proficient in English (at least B2 level).**



### Key Selection Criteria

1. CGPA of MSc and BSc transcripts
2. Experiences in academic and research institutions or pertinent professional experience
3. Additional educational or training experiences
4. Scientific publications in pertinent peer reviewed international journals or conferences
5. Discussion of background and proposed research project during the interview

The positions adhere to the European policy of balanced ethnicity, age and gender. Both men and women are encouraged to apply.

### Working Conditions

We offer a 36-months full-time work contract, expected to start on 1st September 2021. The position will be based in Pisa (Italy) and international travels are foreseen.

The remuneration, in line with the European Commission rules for Marie Skłodowska-Curie grant holders, will consist of a salary augmented by a mobility allowance, resulting in a gross monthly salary of 3,268.08 euros, with possibility to be raised depending on the candidate's family status at the time of recruitment.

### Further benefits

The ESRs will be involved in a Marie Skłodowska-Curie network with excellent opportunities for scientific and personal development. These include:

- Regularly adapted personal career development plans.
- Funding for short stays at top-class research groups.
- Regular training events and meetings across Europe.

### Application

Applicants will be selected on their potential for scientific excellence and adaptability to work in a multicultural environment. Recruitment will be a transparent, open and equal process following the guidelines of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers. Carefully read the guidelines before applying. NB: the recruitment and interview process for this position is specific to EINST4INE project. Still, applicants should make sure they comply with the recruiting institution conditions.

The application must be submitted online, together with the following supporting documents (in English):

- A detailed Curriculum Vitae et Studiorum (2-pages max);
- A letter of motivation (1,000 words max);



- A brief, non-binding, research proposal for the ESR project, addressing the state of the art, the objectives, the methodology (3,000 words max);
- A copy of your official academic degree(s) and the corresponding transcripts – both BSc and MSc degrees should be submitted;
- A proof of English proficiency (level B2 required).

NB: All candidates holding a qualification obtained abroad Italy (both EU and NON-EU Countries) are required to submit a copy of their original degree certificate along with a translation unless written in English/French/Spanish/German. Admission to the Programme for candidates holding a foreign qualification obtained in a NON-EU Country is in any case subject to verification of the qualification held, which is carried out on the basis of the “Dichiarazione di valore in loco” [statement of validity] issued by the local Italian diplomatic office, or, alternatively, of the Diploma Supplement.

The data of the applicant will be collected for the sole purpose of the selection procedure, such as described in Grant Agreement No. 956745 - Horizon 2020 EINST4INE. The candidate may refer to RMIT EU (coordinator) in order to exercise her/his rights under art. 15 – 22 Reg. (EU) 2016/679.

