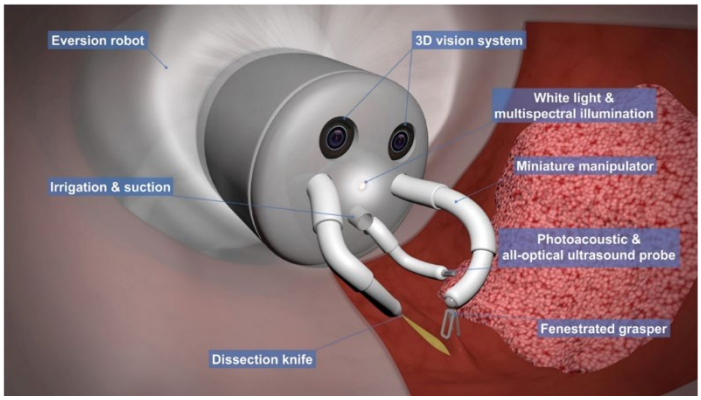
CALL FOR THE RECRUITMENT OF 1 FULL-TIME RESEARCH ASSISTANT WITH A TEMPORARY EMPLOYMENT CONTRACT AT CREATE CONSORTIUM IN THE FIELD OF MEDICAL ROBOTICS WITHIN THE ERC SYNERGY GRANT PROJECT

C.R.E.A.T.E. Consortium (CREATE) seeks 1 full-time Research Assistant (RA) to work on:
RA — Soft Robots Design and Construction

Hiring!



CREATE is a non-profit research organisation possessing a legal personality. According to Italian law, it belongs to the class of Consorzi, where a number of subjects give life to an independent body intended to reach commonly agreed objectives. CREATE was founded in late 1992 with the aim of establishing a stable link between industry and university. The current partnership of the consortium includes Ansaldo Nucleare SpA, University of Basilicata, University of Campania Luigi Vanvitelli, University of Cassino and Southern Lazio, University of Naples Federico II, University of Naples Parthenope, and University of Trieste.

Over the years, CREATE has gained vast experience from participation and coordination of more than twenty FP7 and H2020 European projects in the field or robotics and automation.

Since 20 years a collaboration is active between CREATE and PRISMA Lab (Projects of Industrial and Service Robotics Mechatronics and Automation) in DIETI (Department of Electrical Engineering and Information Technology) at University of Naples Federico II. The PRISMA team is committed since 35 years to pursuing research in robotics and automation, and it is internationally recognized in the community for their achievements on industrial and service robotics.

The RAs will work with the Medical Robotics Team of the PRISMA group within the project "EndoTheranostics — Multi-sensor Eversion Robot Towards Intelligent Endoscopic Diagnosis and Therapy". The EndoTheranostics project is one of 37 projects selected for funding from 395 proposals in the ERC Synergy Grant 2022 call, the only one to be funded on robotics.

Project description

EndoTheranostics is a multidisciplinary research project that will revolutionise the theranostics of colorectal cancer (CRC), impacting the quality of life of millions of individuals.

CRC represents a significant proportion of malignant diseases. Interventions are often carried out during the latter stages of development, leading to low patient survival rates and poor quality of life. In 2022 a European Commission report stated that "colonoscopy-based screening has higher sensitivity than testing for blood in stool, but it is less acceptable to participants". At the same time, effective methods to treat polyps in the colon are limited. Current approaches are often associated with unsafe oncological margins and high complication rates, requiring life-changing surgery.

EndoTheranostics will usher in a new era for screening colonoscopy, advancing the frontiers of medical imaging and robotics. A tip-growing or eversion robot with a sleeve-like structure will be created to extend deep into hollow spaces while perceiving the environment through multimodal imaging and sensing. It will also act as a conduit to transfer

miniaturised instruments to the remote site within the colon for diagnosis and therapy (theranostics). With these capabilities, the system will be able to offer:

- painless colon cleansing in preparation for endoscopy
- real-time polyp detection and tissue characterisation through AI-assisted multimodal imaging
- effective removal of polyps by conveying a “miniature mobile operating chamber” equipped with microsurgical tools to the target through the lumen of the eversion robot

EndoTheranostics has the ambition to advance the state-of-the-art in robotics recalling basic research to address a problem so ambitious that it cannnot be dealt with by one team alone. A group of four Principal Investigators (PIs) will work together and bring different skills and resources to tackle ambitious research problems.

The candidate will work in Naples under the supervision of Professor Bruno Siciliano, PI for CREATE and Director of PRISMA Lab, and will take advantage of collaborative partnerships with:

- Professor Alberto Arezzo, Department of Surgical Sciences, University of Torino
- Professor Kaspar Althoefer, School of Engineering and Materials Science, Queen Mary University of London
- Professor Sébastien Ourselin, School of Biomedical Engineering & Imaging Sciences, King’s College London

Project duration: 6 years (July 2024 — June 2030)

Duration of the contract: 2 years, potentially renewable up to the end of the project

Working place: Medical Lab at ICAROS Center & B2R Lab of PRISMA Team

Application deadline: March 23th 2026

Please email your application to <create@unina.it> with your CV, a motivation letter and at least the names of two references. Please include in cc Prof. Bruno Siciliano <bruno.siciliano@unina.it> and Prof. Fanny Ficuciello <fanny.ficuciello@unina.it>.

Selected candidates will be contacted in due course for online interviews.

For the employment, the candidates are required to possess an Italian Fiscal Code. In addition, non-UE residents are required to possess a valid residence permit (“permesso di soggiorno”) for working purposes.

Required skills for RA

- Master’s degree in mechanical engineering, biomedical engineering, electrical engineering, mechatronics, robotics, computer science, computer engineering or related fields
- Extensive expertise in soft robots’ design and construction
- Extensive expertise in design and control of robots with particular focus on tendon-driven and pneumatic actuation
- Extensive expertise in soft robot simulation and teleoperation
- Strong Programming skills in Software CAD, LabVIEW, Python, C++ and/or Matlab. It is also helpful to have experience with robotics-specific libraries such as ROS (Robot Operating System)
- Teammate spirit and good communication skills, both verbal and written, essential for explaining technical concepts to non-technical team members and presenting findings to clients or stakeholders

- Problem solving and creativity skills, as crucial for robotics projects mostly involving complex, multi-disciplinary problems and analytical thinking

The candidate will provide support for the design of soft eversion robots and continuum tendon-driven microrobots integrated with a micro-surgical capsule. The researcher will cooperate with King's College London and Queen Mary research groups, focusing on advanced medical applications.

Salary: From 38.000 € gross per year, depending on the candidate's expertise; — the project will cover expenses for the research activities related to the offered position (conferences, equipment, etc)

Living in Naples

Naples is the third-largest city in Italy and is the capital of the Campania region. World-known for its rich history, art, culture, architecture, music, and gastronomy, Naples is a lively, exciting, and bustling city situated on the southwest coast in a gorgeous gulf, and it is surrounded by attractive tourist and archaeological sites such as Capri, Ischia, Amalfi Coast, Pompei, Ercolano, Mount Vesuvius.

The cost of living in Naples is medium-low compared to other Italian and north European cities; see the useful tool to check the local costs of some goods.

Healthcare is provided to all residents (including people with residence permit) by a mixed public-private system. Individuals can access public treatments either for free or by paying a ticket depending on the medical procedures. Several drugs are at low cost. Private healthcare services are also available upon payment of doctor fees.

In general, the cost of renting an apartment ranges from 500 € to 600 € per month (single person), or from 600 € to 900 € per month (family), depending on the number of rooms and the chosen neighborhood.