

CALL FOR EXPRESSION OF INTEREST

Research fellowship in

Smart Networking for Intelligent Environments in 6G networks

at

CNR-IEIIT

The Institute of Electronics, Information Engineering and Telecommunications of the National Research Council of Italy (CNR-IEIIT) is seeking candidates for a research fellowship in the area of Communications and Networking Engineering oriented to forthcoming 6G (and beyond) mobile networks.

About CNR-IEIIT

IEIIT (<https://www.ieiit.cnr.it>) is the Institute of Electronics, Information Engineering and Telecommunications of the National Research Council of Italy (CNR), the largest research institution in the country. The Institute includes around 50 tenured researchers, working on a wide range of fields including electronics, electromagnetism, telecommunications, system control, artificial intelligence, computer science and bioengineering. It has six branches, located in Torino (where the successful candidate will be based), Milano, Padova, Bologna, Genova, and Pisa. Its researchers routinely cooperate with university professors and researchers, including those from Politecnico di Torino and Politecnico di Milano, many of whom hold a double affiliation with CNR.

The challenge

The environments we spend our life in are teeming with intelligent devices, from the HomeKit appliances making our homes more comfortable, to the autonomous vehicles crisscrossing our cities. All these devices are based upon artificial intelligence, and such intelligence requires massive amounts of data to be gathered and exchanged.

In order to support communication in intelligent environments, 6G and beyond mobile networks need to become *smart*, along two main directions. On the one hand, they will increasingly blend within the environment, through pervasive deployments and the usage of configurable hardware. On the other, managing the networks themselves will require swift, high-quality decisions, to be made by applying artificial intelligence and machine-learning techniques to massive amounts of real-time data.

Job description

The successful candidate will be integrated within the Torino branch of CNR-IEIIT, under the supervision of Senior Researcher Dr. Alessandro Nardio. The candidate will perform cutting-edge, fundamental research in the broad area of smart networking and communications, including:

- characterization and performance evaluation of different communication technologies, including mmWave and terahertz networks leveraging intelligent reflecting surfaces;
- application and development of artificial intelligence techniques for cross-layer network management;
- study of the relationship between the networks and the environment they operate into, including the characterization and forecast of user mobility and demand.

The position is fully funded by CNR-IEIIT, which allows a certain latitude in defining the details of the research to carry out, also accounting for the candidate's profile and interests.

What we offer

- a competitive net salary, ranging from about 1600,00 to about 1900,0 €/month, depending upon the candidate's experience, along with mobility funding;
- a contract extensible for up to three years, contingent on performance;
- the opportunity to interact and integrate within a team of world-class researchers from CNR-IEIIT and the universities it cooperates with;
- the opportunity to conduct relevant, cutting-edge research and present it at top-level conferences and journals, thus becoming a strong candidate for permanent positions within CNR or elsewhere;
- the opportunity to live in the vibrant city of Torino, which consistently ranks among the best in Italy for quality of life.

What we seek

The successful candidate will have a PhD in Telecommunications Engineering, Computer Science, or a related field, obtained from at most three years, and a strong publication record.

Excellent written and oral communication skills in English are required. Knowledge of the Italian language is not needed for the job, but a minimum level of proficiency (A2 in the CEFR framework) is required by law.

Programming experience in any language, especially Python and/or Matlab, is required.

How to apply

Applicants should e-mail Dr. Alessandro Nordio (alessandro.nordio@ieiit.cnr.it), sending:

- a cover letter, stating the reasons for applying to this specific position;
- a full CV, including a list of publications;
- the contact details of at least three referees.

The expected starting date is the second quarter of 2022; applications received by January 2022 will be given full consideration.