Hosting offer for Marie Sklodowska-Curie Postdoctoral Fellowships (PF) 2022 at University of Cyprus / Networked Control Systems (NetCoSy) Group

MSCA Postdoctoral Fellowships are individual research grants offering excellent postdoctoral researchers the chance to develop their skills by means of international mobility. Through the implementation of an original and personalised research project, MSCA Postdoctoral Fellowships aim to foster excellence through training and mobility and to equip researchers with new skills and competences in order to identify solutions to current and future challenges.

University of Cyprus/NetCoSy Group invites motivated postdoctoral researchers to jointly prepare an application for the MSCA-PF-2022 call Marie Skłodowska-Curie Postdoctoral Fellowships call (MSCA-PF-2022) with them as host organisation.

Description of Hosting organisation/group

Scientific breakthroughs enable new technology whereas at the same time, technology makes it into transformative applications (see, for example, the Internet and wireless communication systems). It is evident that the advancement of smart devices with impressive sensing, computing and control capabilities makes it possible for our cities, transportation systems, factories and living environments to become more intelligent, energy-efficient, safe and secure. We are now witnessing an explosion in networked systems: everything is connected and massive amounts of devices are required to be coordinated. However, the overall system is distributed and a service should be delivered cooperatively, rather than by a unique provider that knows and owns all data. Many researchers and practitioners are interested in understanding the complexity and possible solution approaches, since distributed systems apply to different areas and applications and are anticipated to play a central role in the near future.

In applications that can be characterized as distributed systems, dynamical systems are controlled or communicate and interact with other dynamical systems via a network of sensors and actuators transmitting and receiving information over a digital communication network. Real communication channels suffer from various problems (such as limited capacity, bit errors, erasures and random delays) that can affect the stability and/or performance of the whole system. Given the multidisciplinary nature of distributed systems, many studies are necessarily restricted to contributions that solve problems partially, ignoring important aspects of such systems due to modular approaches to the problem. In order to be able to deal with distributed systems, we need to better understand information, and the interplay between information and decisions. However, communication and control/decision making have traditionally been treated separately whereas recent emerging applications necessitate a more holistic approach, since communication and control are no longer independent.

The main objective of this line or research is to develop the framework on how to treat the interplay between communications and control to solve distributed control and optimization problems arising in distributed systems and in Cyber-Physical Systems (CPS), in general.

Topics/expertise

The group's primary research targets the design and analysis of (wireless) networked control systems that are stable, scalable and energy efficient. The study of such systems involves the interaction between dynamical systems, their communication and the integration of these concepts.

As a result, the research is interdisciplinary combining theory and applications from control theory, communications, network and distributed optimization.

Your profile

We welcome postdoctoral candidates for an MSCA-PF application in the following research topics:

- *Networked control systems (resource allocation, control over communication, communication for control, etc)*
- *Distributed coordination and distributed optimization*
- *Intelligent transportation systems (intersection crossing, platooning, traffic control)*
- *Expected qualifications/expertise of the candidate: Control/communication/information theory*
- *You must have a completed PhD at the time of the call deadline (14 September 2022).*
- *Candidates must have a maximum of 8 years full-time research experience from the PhD award date until September 14, 2022. Periods of inactivity in research (e.g. unemployment, periods of employment outside research, parental or sick leave) do not count towards the time of research experience.*
- *For European fellowships, candidates can be of any nationality and must not have resided or carried out their main activity (work, studies, etc.) in Cyprus for more than 12 months in the 36 months immediately before September 14, 2022.*
- *Highly motivated candidate with an excellent research track record appropriate to career stage, as evidenced by academic publications and other scientific output.*

What we offer

- *Support and guidance for the preparation of your MSCA PF proposal*
- *A stimulating, interdisciplinary environment for high-level research.*

How to apply?

Indicate your interest by contacting the host institution as follows:

Please contact Prof Themistoklis Charalambous (charalambous.themistoklis@ucy.ac.cy) by email with a CV and motivation letter to indicate your interest to prepare a MSCA-PF application for joining the NetCoSy Group.

After the supervisor (Prof Charalambous) agrees to support you as a MSCA-PF candidate, you can start preparation of MSCA PF project proposal and will be supported further by the Research Support Office of the host university.