KIOS RESEARCH AND INNOVATION CENTER OF EXCELLENCE

European MSCA Doctoral Network PhD Scholarship (DC12)

No. of Positions : One (1)
Category : European Marie Sklodowska-Curie Action Doctoral Network SPRING (2026–2030)
Location : **University of Cyprus (UCY), Nicosia, Cyprus**

The KIOS Research and Innovation Center of Excellence (KIOS CoE) at the University of Cyprus (UCY-KIOS) announces **one (1) full-time MSCA Doctoral Candidate (PhD)** position. This position is part of the European MSCA Doctoral Network "Resilience experts in future large-scale critical infrastructures" (SPRING) (2026–2030). *More information about the specific topics that the successful candidate will work on can be found on the SPRING project website* https://spring-project.eu/doctoral-projects (position reference DC 12).

SPRING DN is implemented by an international consortium of universities, research institutes, and industrial and other non-academic partners, providing doctoral candidates with an interdisciplinary research and training environment. The network combines systems and control theory, formal methods, explainable AI, data-driven approaches, and human-centered design to address the resilience of interconnected cyber-physical critical infrastructures. Candidates will participate in international mobility, secondments, specialized training activities, and validation studies involving real-world use cases in the energy, water, and transportation sectors.

The project combines interdisciplinary research with structured doctoral training to form experts capable of working across academia and the public, private, and third sectors, with a focus on:

- Develop anticipatory defense, automated diagnosis, and real-time risk-aware response mechanisms for future Critical Infrastructures.
- Create a scalable, long-lasting library of resilience agents and supporting training materials for energy, water, and transport infrastructures.
- Bridge academia and industry by validating explainable AI, formal methods, and human-centered approaches in real-world industrial environments.

The selected student will be enrolled in either the Electrical Engineering or the Computer Engineering PhD program of the Department of Electrical and Computer Engineering (ECE) at the University of Cyprus (UCY), the top-ranking university of the country. The ECE Department conducts top-quality research, with its faculty securing prestigious projects including multiple ERC Grants, Horizon2020/ Horizon Europe RIA projects, and many more. The selected student will work under the supervision of Prof. Mathaios Panteli and Prof. Demetrios Eliades (https://www.kios.ucy.ac.cy/people_category/kios-faculty/).

The successful candidate will conduct research at the state-of-the-art facilities of the KIOS Center of Excellence. In particular, the focus will be to advance Digital Twin (DT) technology for enhancing the resilience of interconnected Critical Infrastructures (CIs), addressing current limitations related to scalability, interoperability, cascading failures, and real-time data integration. The research will develop a scalable DT framework combining formal methods, modelling and simulation, knowledge engineering, and adaptive AI to represent complex cyber-physical infrastructure systems. The research will investigate anticipatory self-adaptation, LLM-supported human-interpretable diagnostics, explainable AI, and real-time risk-aware incident response to support rapid, human-interpretable decision-making while maintaining system safety and performance during disruptions and recovery. Finally, it will develop a reusable library of intelligent

software agents to provide resilience-as-a-service across multiple CI sectors, including energy, water, and transportation.

KIOS Research and Innovation Center of Excellence (KIOS CoE)

The KIOS Research and Innovation Center of Excellence operates within the University of Cyprus and is currently the largest research center at the University. KIOS is a leading research and innovation center in Cyprus and the region on Information and Communication Technologies (ICT). Since its establishment in 2008, the Center has followed an impressive and continuous development, leading to its significant upgrade to a European Research Center of Excellence through the EU strategic Horizon 2020 Teaming project in 2017. The Center collaborates strategically with Imperial College London, as well as with a plethora of local and international research organizations and other stakeholders.

The Center provides an inspiring environment for carrying out top-level research in the area of ICT, with emphasis on the Monitoring, Control, Management and Security of Critical Infrastructures, including power and energy systems, water, transportation and telecommunication networks, healthcare systems, as well as systems for emergency management and response. KIOS researchers develop new knowledge and technological solutions to improve the operation, efficiency, reliability, safety, and security of these systems, bringing major socio-economic and environmental benefits at the local and global level.

Since its inception, the Center has been involved in more than 170 externally funded research and innovation projects and has received significant national and international recognition, as evidenced by important research grants, awards and distinctions such as 6 ERC Grants from the European Council (including the first ever ERC Advanced Grant and the first ever ERC Synergy Grant in Cyprus), the coordination of several EU-funded projects such as COCOON, SPARROW and GuardAI, the coordination of the ESF COST Action IntelliCIS (the first COST Action to be coordinated by a team from Cyprus), the first EU Teaming project to a Cypriot organization, an IEEE Frank Rosenblatt Technical Field Award, an IEEE Neural Networks Pioneer Award, a National Experienced Researcher of the Year Award, multiple National New Researcher of the Year Awards, National Innovation & Entrepreneurship Awards, and several Best Paper Awards in top-tier international conferences and journals. These awards indicate the high-quality of research undertaken at the Center.

Currently, the Center employs more than 200 people and is involved in more than 50 research and innovation projects funded by various European and national funding agencies, as well as in more than 20 projects funded by the industry. In addition, the Center instigates interdisciplinary interaction and promotes collaboration between industry, academia, and research organizations in high-tech areas of global importance. The KIOS CoE operates in a diverse environment as an equal opportunity employer.

University of Cyprus

The University of Cyprus, founded in 1989, is a young and dynamic academic institution of national and international recognition. Focused on excellence in education, research and innovation, the University of Cyprus is renowned for its high-impact research profile and quality of teaching. In the latest prestigious Shanghai List (2025), it ranked between the top 801-900 universities in the world. Today, it is ranked amongst the top 100 young universities (under 50 years) and #401-500 worldwide by the Times New Higher Education Rankings.

These distinctions indicate the university's focus on research excellence and continuous development. Therefore, it aims to attract high-skilled researchers who will bring new ideas and contribute to the advancement of knowledge for the benefit of society.

Scholarship Terms:

The PhD Scholarship offers a monthly competitive salary to cover living allowance (€2,845.92 gross salary), social and health insurance (according to the University of Cyprus regulations), mobility (€689.99 gross amount) plus a family allowance (if the candidate is married or in an equivalent relationship: €481.05 gross amount) per month ,following the European MSCA Doctoral Network rules (see MSCA rules). Maternity leave will be granted based on Maternity Protection Law 1997(N.100(I)/1997), and the existing amendment laws. The position provides University tuition fees. The scholarship will be offered for a minimum of three years, subject to annual performance evaluation.

Applicants should fulfil the following requirements:

- Applicants may be of any nationality. At the date of recruitment, applicants must not have been awarded a doctoral degree and must satisfy the MSCA Doctoral Network mobility rule. The successful applicant must also meet the admission requirements of the Electrical Engineering or Computer Engineering PhD programme at the University of Cyprus.
- (MSCA DN Mobility Rule) **Applicants 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 their date of recruitment.** Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not taken into account. Date of Recruitment means the first day of the employment of the researcher for the purposes of the action (i.e. the starting date indicated in the employment contract or equivalent direct contract).
- A Bachelor's degree in Electrical and/or Electronic/Computer/Control Engineering, Computer Science, Artificial Intelligence, Applied Mathematics or related areas.
- A strong background in systems and control and/or cyber-physical systems, with demonstrated competence in mathematical modelling, simulation, and scientific programming.
- Candidates should demonstrate the ability to formulate mathematical and computational models, develop and implement computational methods, analyze complex interconnected systems, and conduct rigorous simulation- and software-based research. Strong programming skills and the ability to design modular research software are particularly desirable.
- A very good knowledge of the English language. Proficiency in English can be demonstrated through one of the following:
    - IGCSE: at least C grade
    - IELTS Academic: a minimum total score of 6.5
    - Test of English as a foreign language (ETS TOEFL®): a minimum score of 550 (paper based), 213 (computer based) or 80 (internet-based)
- Strong writing and communication skills compatible with an entry-level research position.
- Capacity to work both as an independent researcher and as part of an international team.
- Willingness to actively contribute to SPRING network activities, including training events, workshops, dissemination activities, and project meetings.

The following experience will be considered as advantage:

- Knowledge of one or more of the following is highly desirable: machine learning, optimization, state estimation, formal methods and system verification, distributed or multi-agent systems, and data-driven analysis of dynamic systems.

- Previous research or project experience in one or more of the following will be considered an advantage: Digital Twins, critical infrastructure modelling, resilience, cyber-physical security, formal specification and verification, distributed and concurrent systems, knowledge representation and ontologies, domain-specific modelling languages, intelligent or multi-agent systems, and distributed software architectures.
- Peer-reviewed scientific publications, research projects, open-source software contributions, or a research-oriented MSc thesis will be considered an advantage.

Application:

Interested candidates should submit the following items online through both the following online application systems:

1. UCY Application Systems: https://applications.ucy.ac.cy/recruitment
2. SPRING Application System: https://forms.gle/FE9BffYwmQ1yK6mM6

Note that incomplete applications or applications not submitted concurrently in both portals above, will NOT be considered.

- Cover letter specifying interest in the SPRING PhD Scholarship position.
- A statement with a short description of academic and research experiences as well as the reasons for applying for the specific scholarship (1 page).
- A statement with the candidate's future research plans in context of the announced project position (up to 1 page).
- A detailed curriculum vitae in English, which includes a list of publications (if any).
- Copies of official BSc/MSc degree(s) as well as copies of official transcripts for each degree (if the original language of the degree/transcript is not Greek or English, copies of official translations are also required).
- Copy of English language proficiency certificate.
- Provide contact details of at least two academic referees who can provide letters of recommendation.

The applications should be submitted as soon as possible, but not later than **Friday, 16th of October 2026. The position must be filled as soon as possible; evaluation will take place on a rolling basis until the position is filled.** Top candidates may be funded (travel and accommodation expenses) for an on-site interview at UCY.

The University of Cyprus shall collect and process your personal data according to the provisions of the General Regulation on Personal Data 2016/679 (EU).

The University of Cyprus (UCY) is committed to promoting inclusivity, diversity, and equality, as well as the elimination of all forms of discrimination in order to provide a fair, safe, and pleasant environment for the entire university community, where students and staff members will feel supported both in their professional and personal development, within and beyond their multiple identities. To this end, UCY seeks to create the necessary conditions that will encourage and respect diversity and ensure dignity both in the workplace and society at large. Moreover, UCY has adopted specific policies to promote equal opportunities, as well as respect and understanding of diversity, while it is committed to promoting and maintaining a working, teaching, and learning environment, free from any form of discrimination, whether direct or indirect.

For more information, please contact the KIOS Center of Excellence, by phone at +357 22893460 or via e-mail at kioshiring@ucy.ac.cy.