

Ph.D. position in the area of "Formal Verification and Synthesis of Cyber-Physical Systems" in the School of Computing at Newcastle University, United Kingdom

A fully funded Ph.D. position is available in the area of "Formal Verification and Synthesis of Cyber-Physical Systems" in the School of Computing at Newcastle University.

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Cyber-physical systems (CPS) are systems of collaborating computational elements controlling physical entities. Composition of continuous and discrete models is essential for capturing the behaviour of such systems. Verification and synthesis of CPS are algorithmically studied using abstraction techniques and model checking tools. The goal of this research is to focus on formal verification and controller synthesis of CPS models by addressing robustness and scalability of the algorithms, while taking uncertainty into account, utilising available data from the system and synthesising optimal controllers. Application areas of the research include, among others, smart grids, energy networks and systems biology.

This studentship provides a unique opportunity to perform interdisciplinary, high-impact research within a group of interdisciplinary researchers. The successful candidate will work closely with Dr Soudjani and will join the AMBER group, which gives possibility of collaboration and interaction with scientists in CESI centre on energy applications and in ICOS group on Biosystems.

The successful candidate has an excellent first degree in, e.g., computer science, mathematics, or engineering. For this interdisciplinary research, the candidate is expected to have a strong background in one of the three areas (control theory, computer science, probability theory) and wish to gain knowledge on the other areas.

The School of Computing, including the AMBER group, has recently moved in a new, state-of-the-art, £58 million building which is highly sensorised and can be used as a unique research facility.

Application closing date is 15 July 2018 or until funding a suitable candidate. Expected start date is October 2018 or soon thereafter. The appointment will be for 3 years.

Interested individuals should send their detailed curriculum vitae and other supporting documents to Dr Sadegh Soudjani (sadegh.soudjani@ncl.ac.uk). Only potential suitable candidates will be contacted. Official advert can be found at:

<https://www.ncl.ac.uk/postgraduate/funding/sources/allstudents/comp006.html>