



School of Computing, Engineering, and the Built Environment Edinburgh Napier University

PHD STUDENT PROJECT

Funding and application details

Funding status: Self-funded students only

Application instructions:

Detailed instructions are available at <https://www.napier.ac.uk/research-and-innovation/research-degrees/how-to-apply>

Prospective candidates are encouraged to contact the Director of Studies (see details below) to discuss the project and their suitability for it.

Project details

Supervisory Team:

- DIRECTOR OF STUDY: Professor Frauke Zeller (Email: F.Zeller@napier.ac.uk)
- 2ND SUPERVISOR:

Subject Group: Applied informatics

Research Areas: Artificial Intelligence, Robotics, Human Computer Interaction

Project Title: Shaping Tomorrow: PhD Opportunity in Social Robotics and AI Research

Project description:

Join us in defining the future of responsible artificial intelligence (AI) in social robotics. Edinburgh Napier University's School of Computing, Engineering & the Built Environment invites self-funded PhD students to contribute to ground-breaking research in social robotics and responsible AI.

Experts predict that robots and artificial intelligence will be integrated into many aspects of our lives. There is already a wide range of applications, from industrial robots transforming manufacturing processes to robots working alongside humans

in offices and services. A shift is taking place in the healthcare sector, where robots are making their way into patient care and support.

In the future, social robots could also become companions and helpers in our daily lives. In this context, the use of responsible AI, which is partly used in these robots, is becoming increasingly relevant.

This makes research in the interdisciplinary field of social robotics, which includes robotics/HRI, communication, culture, AI and creative informatics even more important. Applicants should have a relevant degree in a related field and a strong interest and experience in working with/in social robots, human-machine interaction, artificial intelligence, or interaction design research.

Take this opportunity to explore the ethical and social implications while pushing the boundaries of technological innovation. Use your knowledge and research interests to explore robotics with the help of our experts, a state-of-the-art interaction lab, a sensorium suite, and a range of social robots. Decide whether you want to focus on social robots that interact seamlessly with people in different environments, explore the opportunities and challenges of AI in general, or any other robotics/AI-related topic.

You will be working in an interdisciplinary team with Prof Frauke Zeller (<https://napier.ac.uk/people/frauke-zeller>) as team leader. Prof Zeller's research expertise is in HRI, HCI, AI and innovative research methods. She has worked in Canada, Germany and the UK, and is the co-creator of world-famous hitchBOT, Canada's first hitchhiking robot.

References:

- [1] Hudson, S., Nishat, F., Stinson, J., Litwin, S., Zeller, F., Wiles, B., ...Ali, S. (2023). Perspectives of Healthcare Providers to Inform the Design of an AI-Enhanced Social Robot in the Pediatric Emergency Department. *Children*, 10(9), Article 1511. <https://doi.org/10.3390/children10091511>
- [2] Angelopoulou, A., Kapetanios, E., Smith, D. H., Steuber, V., Woll, B., & Zeller, F. (2022). Editorial: Explanation in human-AI systems. *Frontiers in Artificial Intelligence*, 5, Article 1048568. <https://doi.org/10.3389/frai.2022.1048568>
- [3] Zeller, F., & Dwyer, L. (2022). Systems of collaboration: challenges and solutions for interdisciplinary research in AI and social robotics. *Discover Artificial Intelligence*, 2(1), Article 12. <https://doi.org/10.1007/s44163-022-00027-3>
- [4] Zeller, F., Petrick, R. P., Harris Smith, D., Stinson, J., Ellen Foster, M., & Ali, S. (2021). Ethical Frameworks for Artificial Intelligence (AI) and Social Robots in Children's Healthcare Experiences. In *HRI 2021 Workshop on Measuring Child-Robot Relationships*

Candidate characteristics

Education:

A second class honour degree or equivalent qualification in a subject relevant to the PhD will be considered.

Subject knowledge:

Applicants should have a relevant degree in a related field and a strong interest and experience in working with AI, social robots, human-machine interaction, or interaction design research.

Essential attributes:

- A strong commitment to responsible AI and ethical considerations in robotics research.
- Strong analytical and problem-solving skills.
- Outstanding communication and teamwork skills.
- Proficiency in the English language, with a minimum IELTS score of 6.5 or equivalent.

Desirable attributes: