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://blogs.napier.ac.uk/scebe-research/available-phd-student-projects/

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: Adelaide Marzano (Email: A.Marzano@napier.ac.uk)
- 2ND SUPERVISOR: Gokula Vasantha

Subject Group: Engineering & mathematics

Research Areas: Human computer interaction, Manufacturing Engineering, Robotics

Project Title: Human-centred design for autonomous and intelligent complex manufacturing systems

Project description:

The Ph.D. project prepares students to become interdisciplinary scholars who can apply a variety of methodological approaches at the intersection of technology, human behaviour, and design. Students will be able to explore the use of technologies in the context of complex problems through empirical studies and apply results to the design of innovative technologies, strategies, and practices in complex manufacturing systems.

In Industry 5.0 Human workforce and machines work together in close collaboration in order to increase process efficiency by utilizing human creativity and brainpower.

The project will address the following research topics:

1) How Humans will be able to rejoin the automated process and cooperate with a new generation of Cobots to add value to products.
2) A synergy between humans and autonomous machines. The autonomous workforce will be perceptive and informed about human intention and desire.
3) A human-centric design solution where the ideal human companion and Cobots collaborate with human resources to enable bespoke autonomous manufacturing through enterprise social networks.

Candidate characteristics

Education:

A first-class honours degree, or a distinction at master level, or equivalent achievements in Manufacturing engineering, human factors in Engineering, Human computer interaction,Computing

Subject knowledge:

- Robotics/Automation
- AI/machine learning
- experimental design and data analysis

Essential attributes:

- Experience of fundamental design and Human factors
- Competent in Programming and Experimental studies
- Knowledge of Virtual reality/AI and Data analysis
- Good written and oral communication skills
- Strong motivation, with evidence of independent research skills relevant to the project
- Good time management