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

PHD STUDENT PROJECT

Application instructions:
Detailed instructions are available at :
https://www.napier.ac.uk/research-and-innovation/doctoral-college/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: Dr Khristin Fabian (Email: k.fabian@napier.ac.uk)
- 2ND SUPERVISOR: Dr Ella Taylor-Smith

Subject Group: Computer Science

Research Areas: Education - Higher Education, Computer Science - Data Science

Project Title: Gendered perspectives of data science

Project description:

This is an open call for research proposals related to gendered perspectives of data science.

Diversity is vital to data science, given its crucial role in understanding the world, communicating information, and guiding behaviour. A diverse workforce is more likely to identify bias and thus mitigate historical and human bias to be integrated in the algorithmic design (Centre for Data Ethics and Innovation, 2020).

There is an increase in demand for specialist data skills across employment sectors (Sigelman et al., 2022; Fearns, Harriss and Lally, 2023). However, recruitment continues to be a challenge, both in the employment sector and within universities. Compounding this challenge is the difficulty of recruiting women and other ethnic minority backgrounds into the field. Studies have found disparities in gender representation, seniority, attrition and self-confidence in AI and data science workforce (Young, Wacjcman and Sprejer, 2023). In addition, data science also has an image problem, perceived as theoretical, low-impact and promoting an

unappealing work culture (Duranton et al., 2020). It is important to identify the role gender play in these issues to promote a more diverse workforce.

The purpose of this PhD is to explore gendered perspectives of data science to identify barriers to recruitment and retainment. We are interested in research questions that seek to understand the interplay of gender with values, motivations and belonging in data science.

References:
[1] Centre for Data Ethics and Innovation (2020). Review into bias in algorithmic decision-making. https://assets.publishing.service.gov.uk/media/60142096d3bf7f70ba377b20/Review_into_bias_in_algorithmic_decision-making.pdf
[2] Duranton, S., Erlebach, J., Brégé, C., Danziger, J., Gallego, A., & Pauly, M. (2020). What's Keeping Women out of Data Science?. BCG.
[3] Fearns, J., Harriss, L., & Lally, C. (2023). Data science skills in the UK workforce.
[4] Sigelman, M., Taska, B., O'Kane, L., Nitschke, J., Strack, R., Baier, J., ... & Kotsis, Á. (2022). Shifting Skills, Moving Targets, and Remaking the Workforce. https://web-assets.bcg.com/c1/c0/649ce92247c48f4efdbf9e38797a/bcg-shifting-skills-moving-targets-and-remaking-the-workforce-may-2022.pdf
[5] Young, E., Wajcman, J., & Sprejer, L. (2023). Mind the gender gap: Inequalities in the emergent professions of artificial intelligence (AI) and data science. New Technology, Work and Employment.

Candidate characteristics

Education:
A second class honour degree or equivalent qualification in Computing Science

Subject knowledge:
- Data Science
- Higher Education

Essential attributes:
- Competent in basic statistics and qualitative research techniques
- Good written and oral communication skills
- Strong motivation, with evidence of independent research skills relevant to the project
- Good time management