Academic Role Profile

Job Title:	Lecturer/Senior Lecturer/Reader in AI for Clean Air

Surrey Institute for People-Centred AI (PAI) appointment

Faculty School/Department(s) for collaboration:

Centre for Vision, Speech and Signal Processing (FEPS), Department of Civil and Environmental Engineering (FEPS), Department of Computer Science (FEPS), Department of Sociology (FASS)

Job Summary/Purpose

The appointee will be expected to lead research, collaboration and project grant applications in AI and AI-domain collaboration aligned with the PAI Institute research strategy in People-centred AI. The post holder will establish and lead a portfolio of research by working closely with the Global Centre for Clean Air Research (GCARE) which is hosted within the Department of Civil & Environmental Engineering.

GCARE, founded and led by Professor Prashant Kumar, is a world-renowned, multi-disciplinary centre with a mission to realise a collaborative global vision of 'clean air for all'. It provides a virtual and physical collaborative platform for conducting leading-edge research, which is supported by a wide range of UKRI (e.g., NERC, EPSRC, ESRC, GCRF, Research England, Innovate UK), charities, industrial and international (e.g., FAPESP Brazil, QNRF Qatar) grants. It hosts the Guildford Living Lab (https://www.surrey.ac.uk/global-centre-clean-air-research/guildford-living-lab) which is a platform for local communities, researchers, industrial companies and other stakeholders to tackle the issues of air pollution and climate change, and co-create and co-design sustainable solutions.

The appointee will teach in the School of Computer Science and Electronic Engineering and the Department of Civil and Environmental Engineering at both undergraduate and postgraduate level in both his/her specialist areas in addition to general contribution with the Department programmes. The post holder will also contribute to leading and delivering teaching in cross-University AI programmes at postgraduate level.

AI for Society 5.0

How can AI transform business and the workplace for the benefit of society?

AI is disrupting business models and working practice with digital supply chains and new digital platforms leading to new value creation. The challenge is to understand the macro-scale societal impact of the AI transformation and lead research and policy to ensure adoption of approaches which are inclusive, fair and benefit society. Research should address AI for personal and societal security of the individual and their data, drawing on Surrey leadership of DECaDE the National Centre for Decentralised Digital Economy. AI for Society 5.0 must address the grand societal challenges aligned with national priorities and Surrey strengths: health; security; food; education; environment; digital economy.

Person Specification AI

- Research leadership in AI, machine learning, data science, computer vision, audio-visual machine perception and/or natural language processing.
- A strong research and publication record.

- Experience in developing research proposals and securing research income together with supervising postgraduate research students.
- Demonstrated track-record of successful research leadership and collaboration.
- Familiarity with development, delivery and assessment of programme units.
- Experience of working with industry and other professional bodies.
- Excellent presentation, communication and interpersonal skills.
- Experience and potential for independent and collaborative research leadership.

Person Specification AI-Clean Air
- Application of machine learning techniques to the air pollution domain
- Experience of data assimilation and machine learning techniques
- Developing algorithms for quality control of the data and forecasting
- Developing techniques for data management, analysis and visualisation
- AI and machine learning techniques to interpret Big Data from sensor networks

Person Specification

This section describes the sum total of knowledge, experience & competence required by the post holder that is necessary for standard acceptable performance in carrying out this role. This is in addition to the criteria contained within the accompanying generic Job Purpose.

	Essential/ Desirable
A higher research degree (PhD)	E
Internationally Excellent research performance (continuing publication record, and evidence of actual/potential ability in external research grant income generation)	E
Strong publication record with a track record of publishing in high quality (such as upper quartile) journals.	E
Excellent communication, inter-personal and networking skills.	E
Excellent organisational and project management skills	E
Potential and willingness to develop a track record in academic leadership	D
Demonstrated ability to successfully supervise doctoral students	D
Evidence of high-quality teaching	D
Evidence of scholarly contributions to conferences, professional meetings and societies at an international level, and evidence of achievements in other external activities at an international level	E

Key Responsibilities

This document is not designed to be a list of all tasks undertaken but an outline record of any faculty/post specific responsibilities (5 to 8 maximum). This should be read in conjunction with those contained within the accompanying generic Job Purpose.

Main Responsibilities/Activities
- Contribute as a Principal Investigator of the AI Institute to establishing and leading pan-University research in People-Centre AI for the benefit of people and society.
- Develop and lead a research portfolio in the area of AI and AI-domain collaboration.
- Contribute to and lead teaching at undergraduate and postgraduate level.

Academic Role Profile

- Lead a programme of research by managing associated financial/physical resources and recruiting/supervising/guiding/mentoring the work of staff and postgraduate students in own specialist subject area.

- Sustain a strong track-record of publication of high-quality research findings in appropriate primary journals and international conferences.

- Maintain a good level of research funding; contribute to planning and coordinating large multi-disciplinary or multi-Faculty bids involving collaborative groups.

- Enhance reputation in own subject area by engaging in external activities at national level such as contributions to professional networks, meetings, conferences, societies, professional and/or government bodies, editing/refereeing journals and papers.

- Perform administrative duties throughout the Institute/Department/Schools as are recognised by the University in roles commensurate with the remit of an academic (ie, Director of Research, Director of Studies, Programme Director and Examinations Officer) and which contribute to the general life and work of the University.

N.B. The above list is not exhaustive.