Post-Doctoral Research Associate in Haptics and Image Processing

Full Time
Fixed Term until 31 March 2024
AC2
Walton Hall, Milton Keynes

The role

The position is advertised as part of a new interdisciplinary project on "SENSE: Sensory Explorations of Nature in School Grounds", funded by the EPSRC (http://kmi.open.ac.uk/projects/name/sense). The project explores the design of haptic interfaces to explore the textures of nature.

The project will explore artificial intelligence (e.g. automated image recognition and processing) as a means to automatically identify textures such as feathers, scales or fur and create a haptic layer that can be rendered by a variable friction haptic screen. This will be used to engage school kids with nature and science learning. There is substantial scope for exploring your own ideas within this broad framework.

The successful candidate will have a PhD in topics related to Artificial Intelligence, Machine Learning, Haptics or Human Computer Interaction.

Key responsibilities

This is a list of **key** responsibilities and is not meant to be exhaustive:
- Conduct research into automated image recognition and processing for pictures of flora and fauna
- Co-create (with other interdisciplinary researchers and end users) haptic interfaces to effectively render the textures in an image through touch
- Integrate developed technologies into php-based websites such as iSpot and BeeWatch.
- Publish findings in internationally leading conferences and journals.

All Staff are expected to:

1. Co-operate with the Open University in ensuring as far as is necessary, that Statutory Requirements, Codes of Practice, University Policies and Departmental Health and Safety arrangements are complied with.
2. Have a strong commitment to the principles and practice of equality and diversity.
3. Attend appropriate staff development events.

Person Specification

Essential

- PhD in topics related to Artificial Intelligence, Machine Learning, Haptics or Human Computer Interaction
- Experience with Artificial Neural Networks (Deep Learning technologies such as TensorFlow, PyTorch, Keras, PyTorch or similar), and ability to apply these to image processing tasks
- Strong programming skills (e.g. python), and some interest in and preferable experience of basic electronics (Raspberry Pi, etc). Any experience with haptic surfaces is a bonus
- Interest in Nature and STEM learning around biodiversity and sustainability issues
- Ability to work in a team and communicate across research sites
- Strong record of scientific publication commensurate with experience

If you would like further details about the role before making an application then please email your query through to Resourcing-Hub@open.ac.uk

About the Unit

Faculty of Science, Technology, Engineering & Mathematics
The Faculty of Science, Technology, Engineering and Mathematics (STEM) is comprised of:

- School of Computing & Communications
- School of Environment, Earth & Ecosystem Sciences
- School of Engineering & Innovation
- School of Life, Health & Chemical Sciences
- School of Mathematics & Statistics
- School of Physical Sciences
- Knowledge Media Institute
- Deanery including teams supporting Curriculum; Research, Enterprise and Scholarship; Laboratory Infrastructure; and Faculty Administration

"We aspire to be world leaders in inclusive, innovative and high impact STEM teaching and research, equipping learners, employers and society with the capabilities to meet tomorrow's challenges"

The Faculty of STEM consists of 2500 staff including 1,800 Associate Lecturers. The Faculty delivers over 185 modules across undergraduate and postgraduate curriculum, supporting nearly 19,000 students (full time equivalents) which is 29% of the OU total.

The Faculty generates more research income (circa £17M) than any other Faculty in the University, supported by a comprehensive laboratory infrastructure.

We are proud of our distinctive values and capabilities underpinning our aspiration:

We are inclusive:
- We transform people's lives, ensuring STEM education is openly accessible to many thousands of students from diverse backgrounds – our students express high satisfaction with their study experience.
- We engage the public in exciting citizen science and engineering, including through free open educational resources, multi-platform broadcasting, outreach to inspire the next generation and with programmes to encourage more women into STEM.

We are highly innovative:
- We are at the forefront of innovative developments in teaching practical science and engineering at a distance, through simulated and remote access laboratories and practical experimentation.
- Our high quality teaching and curriculum are informed by world-leading research, strong links with professional bodies and communities of practitioners, as well as by scholarship focused on continuously improving our STEM pedagogy.

We deliver significant social and economic impact:
- We provide STEM higher education at a scale and reach unsurpassed in the UK, with a sizeable international reach and further growth potential.

- We inject transferable STEM skills and knowledge direct into the workplace for immediate employee and employer benefit, as students combine study while working.
- The employability value of our courses is underpinned by accreditation from leading STEM Professional Bodies and Learned Societies, as well as partnerships and sponsorship with leading employers.
- Our high quality, applied and academically relevant teaching and research addresses real-world issues, delivering impact for industry and society, including addressing pressing STEM skill-shortages across the UK.

KMi

The Knowledge Media Institute (KMi) is a highly successful interdisciplinary research centre founded at The Open University in 1995 and located in attractive premises at The Open University's main campus in Milton Keynes, UK. We offer a stimulating research environment, widely acknowledged to be at the leading edge of research and development, particularly in Societal Applications of Artificial Intelligence, Semantic Technologies, New Media and Information Retrieval. We develop and integrate technology into human activities to support human and environmental needs and augment societal capabilities to influence and respond to changing circumstances. We believe strongly in the social justice mission of the OU, and conduct research in computing technologies for the social good. The style, impact and content of our work can be seen at http://kmi.open.ac.uk/. Information on careers in KMi can be found at: http://kmi.open.ac.uk/careers/

KMi values diversity and is committed to equity of opportunity, and we hold an Athena Swan Bronze award. We would particularly welcome applications from women, since women are, and have historically been, underrepresented on our academic staff. Our diversity statement can be found at http://kmi.open.ac.uk/diversity/.

The Knowledge Media Institute is part of the Faculty of STEM, which consists of 700 staff and 1,800 Associate Lecturers. The Faculty delivers over 185 modules across undergraduate and postgraduate curriculum, supporting nearly 19,000 students (full time equivalents) which is 29% of the OU total. The Faculty generates more research income (circa £17M) than any other Faculty in the University, supported by a comprehensive laboratory infrastructure.