Job Title:	**Research Assistant in AI/Machine Learning for Digital Twin modelling**
Job Ref:	**SCT282**
Campus:	**Hendon**
Grade:	**Grade 6**
Salary:	**£32,407 - £37,165 (inclusive of London Weighting)**
Period:	**The post will start as soon as possible and last until 30th September 2021**
Reporting To:	**Lead Researcher**
Job Holder:	**None**

Role Summary

The role will be held by a research assistant who will work as a member of the London Digital Twin Research Centre.

Job Purpose

To contribute to research applications, co-ordination of research projects funded by UKIERI-DST and Newton Fund programmes, through providing research and project support to senior researchers to enable the delivery of the intended results, to the benefit of the London Digital Twin Research Centre (LDTRC), Faculty of Science and Technology, the University and the wider community. The researcher is expected to work with a team at LDTRC, Middlesex University and collaborate with several other teams from the UK (Siemens and Festo), India (Indian Institute of Information Technology Sri City), Belgium (KU Leuven), France (Schlumberger) and Vietnam (UTC). The main role is the development and implementation of a digital counterpart (a Digital Twin model) using AI/machine learning algorithms and tools to replicate its functionalities, data, communications, feedback, emergency and safety aspects for different applications in Industry 4.0 smart factory, 5G networks and structural health monitoring. The proposed digital twins will not only offer a digitised replication of functionalities but will also enable development towards self-correcting smart process of controlling/monitoring facilities.

Main responsibilities:

Research and knowledge transfer

- Contribute to applications for research and knowledge transfer funding

- Contribute to the design of research and knowledge transfer proposals

- Individually or with others, contribute to the research project through undertaking fieldwork and/or focus groups, using both quantitative and qualitative research methodologies, particularly in mathematical models, data analytics, data science, digital twin and machine learning

- To undertake literature reviews and contribute to the production of research reports, conference papers, and peer-reviewed journals where appropriate.

- Develop and maintain a network of research contacts, in the University and the wider specialist community

- Continually update own knowledge in the field of specialism

- Contribute to Masters and doctoral supervision

Administration
- Support the Lead Researcher with the coordination of research activity, as agreed

- Provide administrative support to the project to include but not limited to note taking, organisation of events and dissemination of information to stakeholders

Learning and Teaching

- Contribute to an agreed level of teaching, including assisting in the supervision of projects

- Provide guidance to students about research methods, analyses, equipment and presentation of results, to help them develop their research and study skills

- Enhance student experience and outcomes

Academic Leadership and Management
- Manage research activity, as agreed

- Advise and coach colleagues as appropriate

- Undertake other activities, as required.

PERSON SPECIFICATION

Post Title: **Research Assistant in AI/Machine Learning for Digital Twin modelling**

Essential requirements

- *Appropriate academic qualifications and experience*: A Master degree or equivalent experience in Electrical and Computer Engineering, Computer Science, Information Technology, Telecommunications, Applied Mathematics, Machine Learning, Statistics and Data Science, Smart Engineering, Cyber Physical System or another closely related discipline

- *Understanding of research methods, research design and data analysis techniques*: Good background in mathematics, statistical methods, data analytics evidenced through contributions to relevant research/publications, academic qualifications and work history; and demonstrable experience in simulation packages/programming skills (Python, Matlab, machine learning packages or equivalent)

- *Evidence of work* directly relevant to supporting the production of research reports within an academic or industry environment, in one or more of the following areas of data science, smart factory, 5G, structural health monitoring, machine learning, and artificial intelligence

- *Evidence of ability to work independently* and as part of a team with demonstrable communication skills in project coordinating, leading and directing a research

discussion, contributing significantly to verifiable products such as research papers, project reports, software programmes, and oral presentations.

Desirable requirements

- A PhD degree in Electrical and Computer Engineering, Computer Science, Information Technology, Telecommunications, Applied Mathematics, AI/Machine Learning, Statistics and Data Science, Smart Engineering, Cyber Physical System or another closely related discipline

- Experience in development of complex software systems, ideally in one or more of the following areas:
    - Digital twin modelling and big data mining,
    - Machine learning and artificial intelligence,
    - Internet-of-Things (IoT), Cyber-physical systems (CPS),
    - Industry 4.0 / Industrial Internet,
    - Automated, self-adaptive und self-organizing systems,
    - Smart manufacturing
    - Structural health monitoring using AI/machine learning
    - AI/machine learning for 5G

- Experience in prototyping and practical experiments as well as model-based reasoning through all levels of systems related to the above areas

- Experience in AI/machine learning for smart manufacturing and/or 5G network and/or structural health monitoring

Hours: 35.5 hours per week, actual daily hours by arrangement

Leave: 35 days per annum plus eight Bank Holidays and seven University days taken at Christmas (pro rata for part-time staff) which may need to be taken as time off in lieu.

Flexibility: Please note that given the need for flexibility in order to meet the changing requirements of the University, the duties and location of this post and the role of the post-holder may be changed after consultation. The balance of duties may vary over time and will be reviewed as part of the appraisal process.

No Parking at Hendon campus: There are no parking facilities for new staff joining our Hendon campus, except for Blue Badge holders. If you are applying for a post at our Hendon Campus please ensure you can commute without using a car.

Information on public transport to Hendon can be found here:
http://www.mdx.ac.uk/campus/campuses/docs/Hendon_campus_map.pdf

We offer an interest-free season ticket loan, interest-free motorbike loan, and bicycle and motorbike parking and changing facilities.

Flexible working applications (including part-time working) will be considered.

If you wish to apply for this post please complete an application form found here:
http://www.mdx.ac.uk/Assets/MUapform.doc

Closing date for receipt of applications: 18th October 2020

<u>What Happens Next ?</u>
If you wish to discuss the job in further detail please contact Prof Huan Nguyen via h.nguyen@mdx.ac.uk or +44 (0) 20 8411 4885. If selected for interview, you will hear directly from someone in the Faculty of Science and Technology, usually within 3 weeks of the closing date. If you do not hear from us you may assume that your application was unsuccessful.