

Center for Digital Health & Precision Medicine

PhD Position Advertisement

AI/ML in Uterine Cancer diagnosis

Supervisors: **Prof. Esther Moss** (University of Leicester)

Prof. Huiyu Zhou (University of Leicester)

Prof. Rooma Sinha (Apollo Hospitals)

Project Overview:

Uterine Cancer (UC) is the most common gynaecological malignancy in the UK with nearly 10,000 new cases diagnosed every year. In India the incidence of UC is rising with >13,000 new cases every year. Endometrial cancer (EC) accounts for 95% of cases and uterine sarcomas (US), rare mesenchymal tumours arising from either the smooth muscle or endometrial stroma of the uterus, account for approximately 3% of cases. Uterine fibroids, post-menopausal bleeding and menorrhagia are extremely common conditions and experienced by the majority of women at some time in their life. Accurately identifying an endometrial cancer or differentiating a uterine fibroid from a sarcoma are of paramount importance, not only to expedite oncology management of patients but to also avoid overtreatment. At present there is no specific test that can be used pre-operatively to differentiate between uterine sarcomas or fibroids, and the diagnosis of an endometrial cancer requires a hysteroscopic biopsy.

The PhD Scholar appointed to this project will focus on developing AI-driven computer vision models for the detection, localization, and characterization of uterine pathology (endometrial malignancy/hyperplasia or fibroid/sarcoma) using medical imaging data. The imaging modalities will be MRI pelvis and ultrasound scan pelvis, with exploratory use of CT images where available. The candidate will work with real-world clinical imaging data and compared to histological diagnoses to build robust and clinically meaningful AI systems for endometrial cancer and uterine sarcoma identification, with an emphasis on methodological rigor, clinical relevance, and ethical AI. The developed AI system will then be validated using the images from Apollo Hospitals and the University of Leicester.

Location and Funding of the Studentship:

The Studentship is funded by the University of Leicester. The Scholar will be based at the CDHPM Hub in Chittoor. The Studentship is available for 3.5 years on a full-time basis. Funding will fully cover the student's stipend, tuition fees, bench fees and funding for attending conferences and for an extended visit to Leicester during the course of the Studentship. The initial stipend will be INR 47,000 per month, inclusive of HRA and is set in accordance to Government of India University Grants Commission guidelines. On successful completion, the Scholar will receive a PhD awarded by the University of Leicester.

Training and Development Opportunities:

The successful Scholar will receive end-to-end training in developing and applying state-of-the-art computer vision methods (CNN-based architectures, Vision Transformers, Hybrid deep learning models) and end product testing the resulting AI Tools in clinical diagnosis of uterine sarcoma. Access to large-scale pelvic imaging data and clinical resources will be provided. Based within CDHPM the Scholar will receive regular supervision and mentorship from an interdisciplinary team of world-renowned experts within the University of Leicester, Apollo Hospitals and The Apollo University. The scholar will receive strong support for professional development from both the University of Leicester and the Apollo University. Scholars will be supported towards developing research independence and a competitive research portfolio and work within a positive research environment with a commitment to honesty and personal and professional growth.

Eligibility and Selection Criteria:

We are looking for highly motivated individuals who are looking to build a career in medical research and who are committed to working within the collaborative nature of the CDHPM.

Candidates should hold a MS in Computer Science, Data Science or related field, have experience with Python + PyTorch/TensorFlow and a strong interest in computer vision and medical imaging. Experience or familiarity with medical image analysis (MRI/CT), object detection or segmentation models and working with large datasets is desirable. Candidates will need to meet the University of Leicester English Language requirements, full information for which can be found <https://le.ac.uk/study/research-degrees/entry-reqs/eng-lang-reqs>. Candidates should not already hold a doctoral degree in a related discipline.

Applications:

For further details and to apply please visit:

<https://le.ac.uk/study/research-degrees/funded-opportunities/cls-digital-health-and-precision-medicine>

Candidates will need to upload their CV, copies of their degree certificates and academic transcripts, personal statement, and provide the details for 2 academic referees.

Informal enquiries are welcomed and should be directed to Dr Lokesh Ravi, Deputy Director, CDHPM at lokesh_r@apollouniversity.edu.in / +91-8098945561

Deadline for applications: 31th July 2026

Shortlisted Candidates will be interviewed on 24th ~ 28th August