

EPSRC CDT in Distributed Algorithms

PhD Project: Developing Reinforcement Learning and Artificial Intelligence Tools to Support Clinical Care Including Care for Women with Perimenopausal and Menopausal Symptoms

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Project Description

This project is being developed by the University of Liverpool in partnership with Newson Health.

Menopause is a significant event in a woman's life, which can negatively affect the quality of life and increase health concerns. Although menopause itself doesn't cause cancer, the transitional phase to menopause can present relations to complex diseases, including breast cancer and endometrial cancer. The advantages and drawbacks of Hormone Replacement Therapy (HRT) are also a subject of debate. This project aims to revolutionise clinical care for women experiencing perimenopausal and menopausal symptoms by leveraging advanced techniques in Machine Learning and Deep Learning.

We aim to develop machine learning methods to better interpret and understand Newson Health's internal clinical data, which can provide clinically valuable insights and has the potential to improve patient care. We also aim to develop deep reinforcement learning methods to automatically learn optimal individualised treatment regimens from clinical data. We will explore the combination of supervised/unsupervised and reinforcement learning to leverage previously collected clinical data to aid the online learning process. Offline reinforcement learning and Generative AI tools will also likely play an important role in our development process. Our research has the potential to improve treatment outcomes and personalised care.

Go to the [EPSRC CDT In Distributed Algorithms](#) website.