

Brain Models and Digital Twins: Towards a proactive ethical approach

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Computational models of the brain provide a unique opportunity to study the brain and to contribute to progress in personalized and precision medicine for brain diseases. Despite their clear utility, however, they raise some ethical, philosophical, social, and cultural questions. Identifying and examining them is key.

One of the first challenges that the identification and examination of these issues encounters is that of undermining the mistaken assumption that science and scientific research are value neutral and separated from their many contexts and that they should carry on unencumbered by “non-scientific” considerations about ethics, culture, and society.

In this talk, I begin by highlighting the importance of ethics as an integral part of scientific research and of attending to and managing ethical and societal considerations from the beginning of the research process. Then I provide a snapshot of some of the current ethical and philosophical issues raised by computational modeling in general in the context of healthcare. I finish by briefly discussing whether anticipated scientific developments in digital twin technology might raise novel concerns.

Presenter: Dr SALLES, Arleen (Center for Research Ethics and Bioethics (CRB) at Uppsala University)

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