



## Neuroscience in the Era of Generative AI

Basement Lecture Theatre, 33 Queen Square, London, WC1N 3BG

13:00-18:00, 20<sup>th</sup> September 2024

BRC Translational Neuroscience are delighted to invite you to attend a workshop designed for clinicians and researchers wishing to understand the use of generative AI in neuroscience and healthcare applications.

In a series of talks and case studies, three featured speakers will present on emerging generative AI technology and discuss how they could transform AI-assisted modelling of imaging, genomics, and unstructured data. Four case studies submitted by UCL researchers will be presented on situations where conventional AI has been used in different areas of neuroscience and the panel will discuss how generative AI could be used to provide superior solutions.

**This event is free to attend. To confirm your attendance, please register using the [UCL Online Store](#) by 18<sup>th</sup> September.**

Attendees are invited to submit in advance case studies from their own work where a solution to a challenging problem involving rich, high-dimensional data has been implemented with standard statistical methods or conventional AI. Please see full instructions on how to submit a case study below.

### Event programme

<b>13:00-13:10</b>	<b>Introduction</b> Professor Parashkev Nachev, University College London
<b>13:10-13:30</b>	<b>Imaging and Generative AI</b> Dr. Carole Sudre, University College London
<b>13:30-13:50</b>	<b>Genomics and Generative AI</b> Professor Delmiro Fernandez-Reyes, University College London
<b>13:50-14:10</b>	<b>Digital Data and Generative AI</b> Professor James Teo, King's College London
<b>14:10-14:30</b>	<b>Break (<i>tea/coffee</i>)</b>
<b>14:30-15:15</b>	<b>Case Study 1</b>
<b>15:15-16:00</b>	<b>Case Study 2</b>
<b>16:00-16:45</b>	<b>Case Study 3</b>
<b>16:45-17:30</b>	<b>Case Study 4</b>
<b>17:30-17:45</b>	<b>Closing Remarks</b> Professor Parashkev Nachev, University College London

### Case study submission

BRC Translational Neuroscience is organising a workshop dedicated to illuminating the use of generative AI to solve problems in neuroscience and neurology that require computational models of high expressivity. To provide practical illustrations of the approach, attendees are invited to submit in advance case studies from their own work where a solution to a challenging problem involving rich, high-dimensional data has been implemented with standard statistical methods or conventional AI.

The problem may fall within any domain of neuroscience and neurology with an (ultimate) translational objective, requiring inferential, predictive, or prescriptive modelling. The study may be planned, in progress, or published. Four cases will be selected based on coherence of problem formulation, potential translational impact, benefit from a generative AI approach, and illustrative capacity. The examination of each case will open with a ten-minute presentation by the authors followed by a discussion between the authors and the panel, with moderated audience participation.

Submissions should be no longer than two pages in length and include information on objectives, formulation, data, methods, and current results (where available). No sensitive information—from a commercial, IP, or clinical perspective—should be shared. The discussion will focus on providing specific constructive feedback of interest to the authors, and general methodological observations of interest to the audience. It is intended that everyone will learn, through case-focused discussion, about the possibilities and limitations—conceptual, practical, and computational—of generative AI.

Submissions are encouraged from researchers at all career levels and from diverse methodological backgrounds whose work falls within the target domain of translational neuroscience and neurology. Please submit your proposal as soon as possible to Prof. Parashkev Nachev ([p.nachev@ucl.ac.uk](mailto:p.nachev@ucl.ac.uk)) and Hannah Collins ([hannah.collins@ucl.ac.uk](mailto:hannah.collins@ucl.ac.uk)) by **15<sup>th</sup> September**. Selections will be announced on 18<sup>th</sup> September.