PhD position available in the Buonomo lab

http://buonomo.bio.ed.ac.uk

EASTBIO Deep learning based analysis of DNA replication in primary mammalian cells
Dr S Buonomo (school of Biology), Dr H Bilen (School of Informatics)

This ground-breaking research project aims to develop deep learning (and machine learning) techniques to the study of the temporal and spatial control of DNA replication in mouse embryonic stem cells. The goal is to design deep learning algorithms that can learn from large amounts of images to classify them ACCURATELY and EXPLAINABLY.

DNA replication is the fundamental process that allows transmission of the genetic information from mother to daughter cell. Monitoring different stages of DNA replication is essential to detect issues in embryonic development. One of the least understood aspects of the control of DNA replication is the temporal and spatial organisation of the activation of the origins of replication, the genomic regions where DNA replication starts due to the slow and manual classification techniques for microscopy images. The focus of this project is to design machine learning algorithms that can automatically learn to classify various patterns in DNA replication and to generate visual explanations to support these predictions. The student will collaborate with the leading biology and machine learning experts during the PhD study. The student will be supported to gain sufficient laboratory skills and knowledge related biological systems, and theoretical/practical expertise in machine learning.

https://www.ed.ac.uk/biology/prospective-students/postgraduate-research/apply-for-a-phd/findaphd

THE UNIVERSITY of EDINBURGH
School of Biological Sciences