Thanks to a grant from the National Productivity and Investment Fund and the BBSRC the University of Cambridge is able to offer four fully funded PhD’s in the area of artificial intelligence and Data-Driving Economy.

All projects have been created jointly by a University of Cambridge Department or Partner Institute and an Industrial Partner Company.

Successful candidates must be able to start their PhD before the end of December 2018.

Students will become part of the BBSRC DTP Cohort offering an extra level of support and training opportunities.

Candidates are asked to select a project from the list below and apply to the corresponding department by the 30th June, 12 noon to be considered for one of the 4 studentships.

**Project Descriptions**

**Application of artificial intelligence methods for understanding genome regulation.**

This PhD project will develop and apply machine learning artificial intelligence methods for the simultaneous analyses of different types of high-throughput sequencing data to extract biologically meaningful patterns and associations between chromatin factors and to determine principles of genome control.

Supervisors: Prof. Julie Ahringer, Gurdon Institute and Department of Genetics; Dr Ted Meeds, Microsoft Research Lab, Cambridge

Apply to department: [PhD in Genetics](#)

**Using machine learning to distinguish between different forms of autophagy**

Supervisors: Dr Rupert Beale (Department of Pathology); Dr Nicholas Ktistakis (Babraham Institute); Dr Matthew Johnson (Microsoft Research)

Apply to department: [PhD in Pathology](#)

**Deep learning of disease-vector biology: hacking the mechanism of mosquito adaptation and pathogenic immune evasion.**

This project will apply deep learning approaches to mosquito genome annotation to help understand the interplay between vector adaptation and pathogen immune evasion. The
outcome of the computational analysis will be validated experimentally using structural, molecular and cellular biology techniques.

Supervisors: Dr. Monique Gangloff (PI Mosquito Immunity); Prof. Nick Gay Department of Biochemistry; Dr. Jonathan Ward (Senior Machine Learning Scientist); Prof. Thomas Hain (co-supervisor, University of Sheffield) at Fetch.ai

Apply to department:: PhD in Biochemistry

**Domestication of the Black Soldier Fly**

The Black Soldier Fly is used to degrade food waste and produce high quality animal feed, and this project will study its genome to understand how the species has adapted to life as a domesticated insect.

Supervisors: Primary supervisor: Prof Chris Jiggins (Department of Zoology); Prof Richard Durbin (Department of Genetics); Miha Pipan, Entomics (Industrial partner)

Apply to department: PhD in Zoology

**Machine learning to improve life sciences metadata collection and data reuse.**

Artificial intelligence (AI) and machine learning (ML) techniques have great potential in the life sciences but their broad application is severely hampered by heterogeneous data. This project will tackle this bottleneck from a variety of interesting angles and has the potential for substantial impact. Students with strong mathematical and computational skills will be at a great advantage.

Supervisors:
Gos Micklem (DAMTP)
Pietro Liò (Computer Science & Technology)
Project partners:
Dr Nick Brown, AstraZeneca

Apply to department: Applied Mathematics and Theoretical Physics

**A machine intelligence pipeline for single-cell characterisation of genetic devices.**

Supervisors: Dr. James Locke (Sainsbury Laboratory, University of Cambridge) and Dr. Andrew Phillips (Microsoft Research)

Apply to department: Plant Sciences
**Personal genomics of sports health and fitness.**

Combining genetic data with extensive tracking data from elite athletes (plus large numbers of consumers), both for scientific discovery and for improving interactive genetically-adjusted training programs dynamically set by a machine-learned coach using feedback from tracking devices

Supervisors: Prof. Julian Gough, MRC Laboratory of Molecular Biology; Project Partner: Genetrainer Limited

Apply to department: [MRC Laboratory of Molecular Biology](https://www.mrc-lmb.cam.ac.uk/)

**Funding notes**

This is a fully funded PhD with a stipend

Funding rules of BBSRC stipulate that applicants must be UK citizens to receive the full award.

**Applying**

Candidates must meet the University of Cambridge entry requirements.

All applications must be made to the project host department via the [University of Cambridge Admissions portal](https://www.admissions.cam.ac.uk/)

Deadline for applying: 30th June 2018