



# Introduction to the EPSRC Centre for Doctoral Training in Machine Learning Systems

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CDT Director



# The University of Edinburgh

Founded **1582**

**49,485 students** total: 29,930 undergraduate, 13,025 taught postgraduate and 6,530 postgraduate research students from ~156 countries in 2023-2024

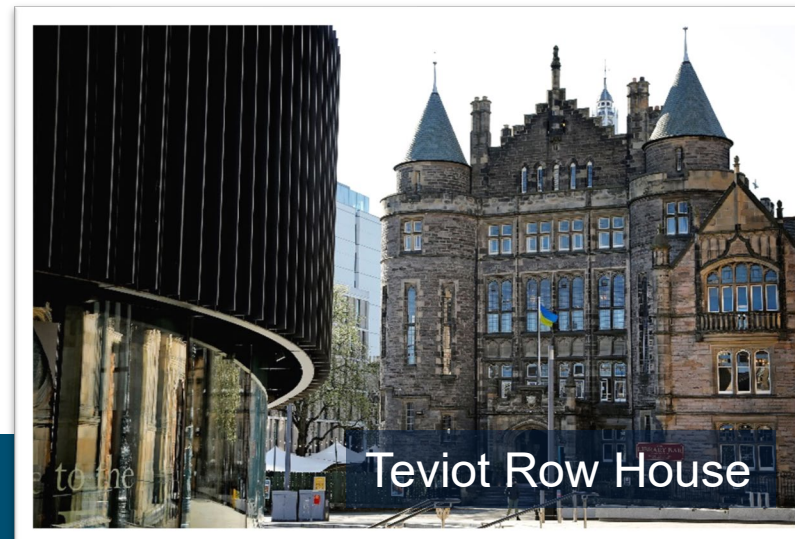
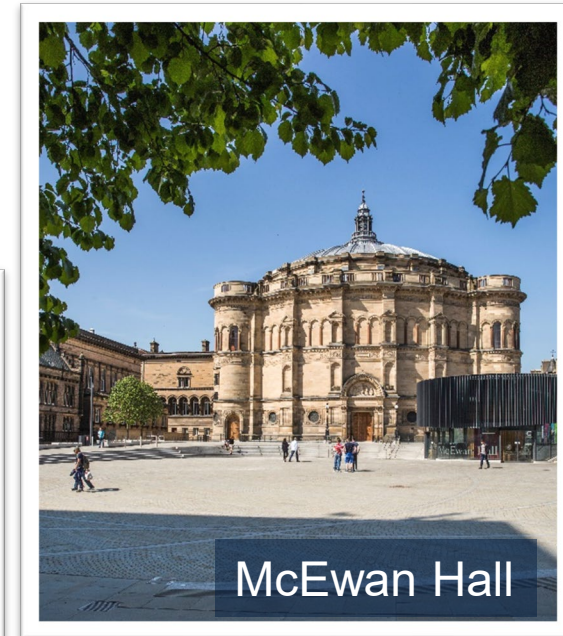
**QS World University Rankings 2024:**

5<sup>th</sup> in the UK, 6<sup>th</sup> in Europe and 22<sup>nd</sup> in the world

**THES World University Rankings 2024:**

5<sup>th</sup> in the UK and 30<sup>th</sup> in the world

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CDT MLSystems - [mlsystems-enquiries@inf.ed.ac.uk](mailto:mlsystems-enquiries@inf.ed.ac.uk)

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# The School of Informatics

**Research Excellence:** #1 in the UK for research power in Computer Science and Informatics THE ranking. 97% of our output (REF) is world leading (4\*) or internationally excellent (3\*).

Our research goes beyond Computer Science and encompasses various disciplines such as **Artificial Intelligence, Cognitive Science and Data Science**

>**300 academic and research staff, 130 professional staff** and > 2000 taught and research students (**~600 PGR students**), largest in the UK and one of the largest in Europe.

Experienced and dedicated **business development team** working with industry, business, and government partners to transfer our world-leading research to the Scottish and global economies.



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# What is a CDT?



- ❖ Centre for Doctoral **Training**
- ❖ UKRI-funded (**EPSRC**)
- ❖ **Cohort-based** programme: **5 cohorts of about 12 students** between 2024 and 2028 (September start only).



Engineering and  
Physical Sciences  
Research Council

# What is a PhD?



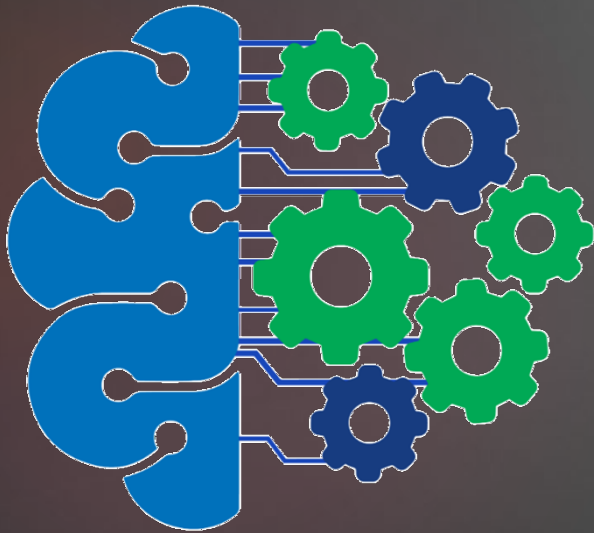
- ❖ A contribution to the body of knowledge in a field (submission of a PhD thesis by end of funding)
- ❖ **All about research**, in collaboration with supervisors, partners and peers
- ❖ Break from university study. NOT more of the same
- ❖ Outreach: publications, conferences, public engagement
- ❖ Defining problems. Building solutions. Assessing validity.
- ❖ Future options: company research, academic, management, startup (and many others).

# The CDT MLSystems



- ❖ **Fully-funded studentships** (stipend, fees and research costs) for 4 years
- ❖ PhD Programme with **integrated studies** (credit-bearing courses) over 4 years
- ❖ Flexible **Training** via credit-bearing courses (180 credits), transferable skills training programme and personal training
- ❖ CDT **cohort-based** events
- ❖ **Industry connection and engagement** via events and integrated internship (4 months) or research visits

# The CDT remit: Machine Learning AND Systems



- ❖ ML performance depends on the systems that implements it. This is about machine learning methods that work!
- ❖ Students collaborate and research on the cutting edge across the full ml-systems stack
- ❖ One supervisor ML / one supervisor Systems
- ❖ See the website for examples of projects:
  - ML4Sys, Sys4ML, environment aware ML, efficient ML, continual learning, architecture design, optimization.

# CDT Training

## Credit-bearing courses (180 cr)

- Machine Learning Practical and Systems
- Controversies in the Data Society
- Elective courses to suit individual needs
- MLS Project
- Internship report



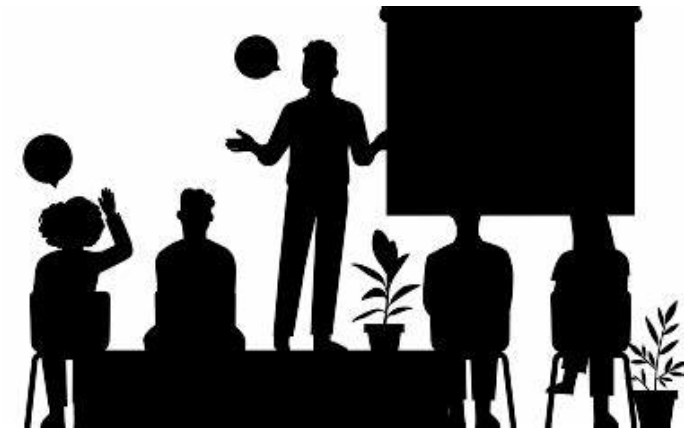
## CDT activities and Transferable skills

- Hackathons, mini-projects, seminars etc.
- Responsible Research and Innovation
- Entrepreneurship
- Research Communication and Public Engagement
- Career Planning
- EDI and Wellbeing

## Personal Training

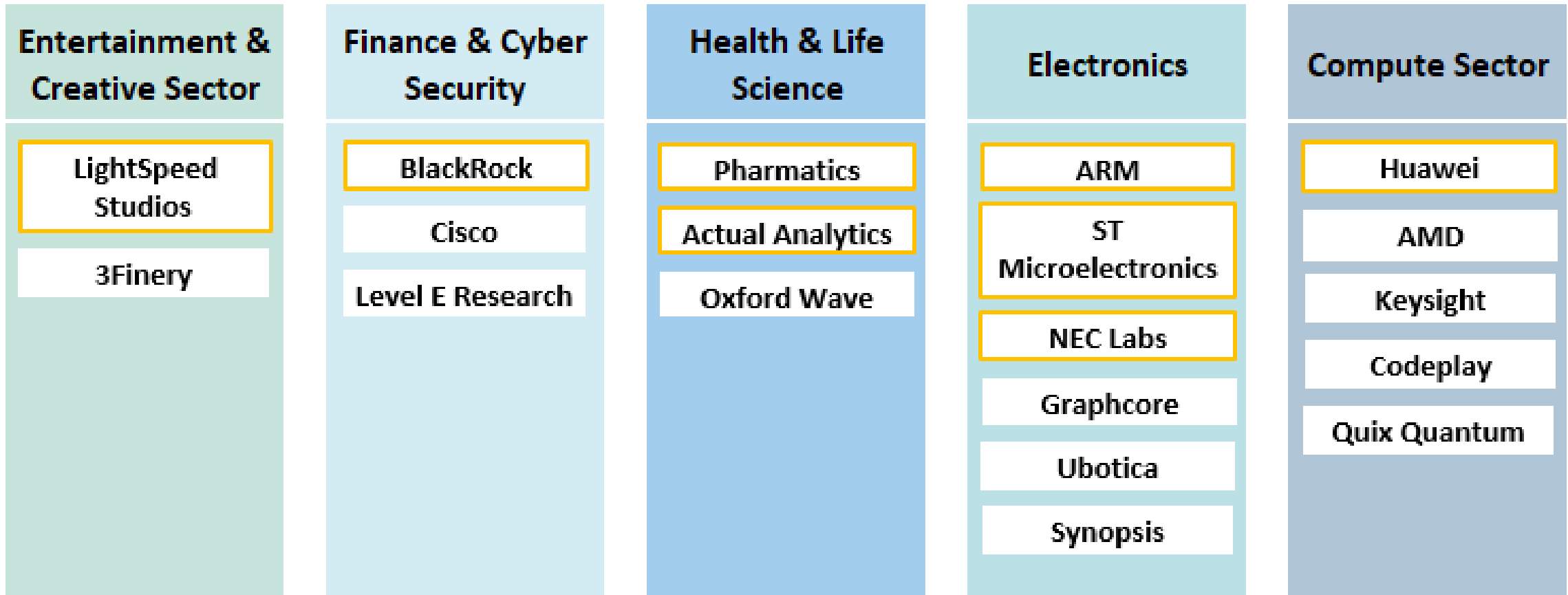
Following a Training Needs Analysis, training to be tailored to individual requirements based on:

- research project
- career goals





# CDT Industry Partners



— CDT Strategic Partners

# CDT Funding



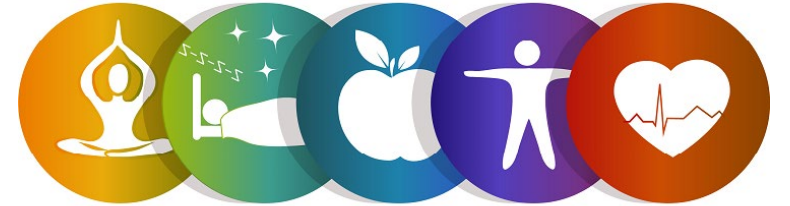
- 4 years of UK-tax-free **stipend** at UKRI rate (£19,237 for 2024/25)
- 4 years of tuition **fees** (home and international)
- **Research costs** of minimum £6,000 to support research expenses
- Standard **IT equipment** kit, hotdesking in Informatics Forum and GPU compute clusters

# Student Support Services

## University Student Support Services:

- Health
- Wellbeing and mental health
- Counselling
- Sport and Exercise
- Disability and Learning and Support
- Student Immigration
- Careers
- Institute for Academic Development
- Accommodation
- Student Finance
- Childcare

The Advice Place by EUSA (Edinburgh University Student Association)





# Living in Edinburgh



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