

# Introduction to Research IT

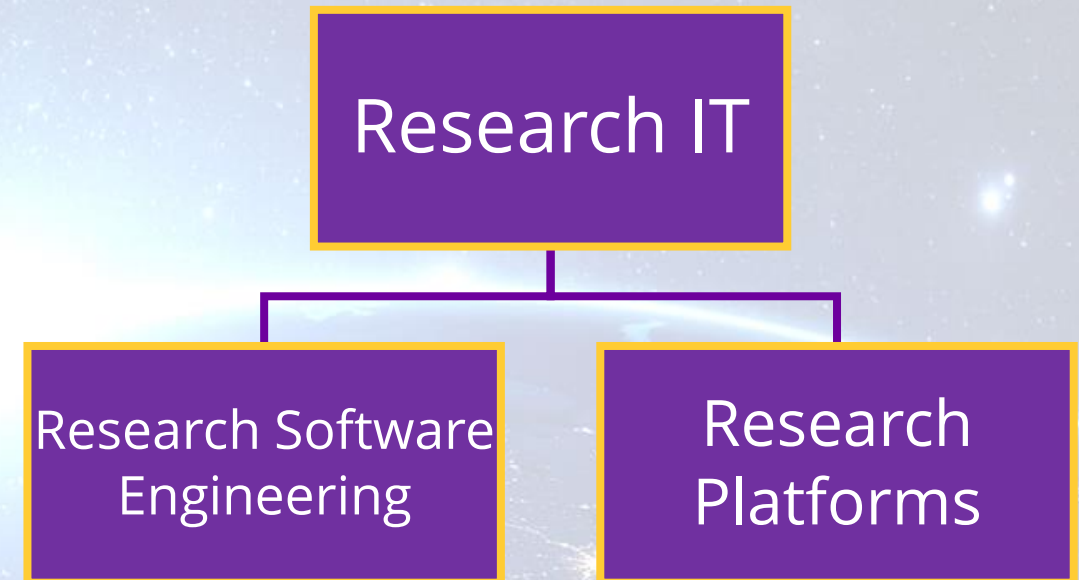
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# Who are Research IT?

- Specialised part of **IT Services**:
  - Supports postgraduate, post-doctoral and academic staff carrying out research at UoM
  - There to support research not day to day IT
  - Provide specialised research services
- Two main groups:
  - Research Platforms
  - Research Software Engineering
  - And also training!



# Services Snapshot

## Research IT Services

Research IT offers a wide range of services to researchers and PGRs at the University. Some of these services incur costs which should be included in research grant applications after a consultation with us. Some services are free of charge or free to a certain limit. Please check the service that you wish to use and get in touch with us if you would like to discuss your requirements further.



### The Computational Shared Facility (CSF)

Provides a batch-based and limited interactive on-campus platform with a large range of software for all research domains to enable computationally-intensive work. Integrated with Research Data Storage



### Research Software Engineering

The Research Software Engineering (RSE) team enhances the University's capacity to produce high quality research software by collaborating with researchers to create correct, efficient, readable, reliable and



### Application Support

Provides help with installing, licensing, building, or running of research applications. This includes both commercial applications used in research and open source, or research written applications.

# Research Platforms

- **Research Computing Platforms**

- Access to a wide range of high performance computing platforms (including GPUs) based at the University.
- Access is through your supervisor who will advise on which resources you should be using.
- Professionally managed HPC systems.
- Ideal for doing computationally intensive jobs.
- 100s of applications pre-installed.

# Research Platforms

## • Research Data Storage

- Replicated **storage for your research data**
- Research groups share **8 TB for free**
- 35-day recovery system for lost data.
- Can be mapped to your local machine for ease of access
- Greater capacity than your OneDrive
- Ask your supervisor about access!

**Advice on  
where to store your data:**

<https://www.staffnet.manchester.ac.uk/igo/how/sharing-and-storing-information/>

**This is where your research data should be stored!**

The University **very strongly discourages** the use of USB sticks/external USB drives/locally managed NAS servers (insecure, unreliable) and provides **no support** if they are lost or fail

<https://research-it.manchester.ac.uk/services/research-data-storage>

# Highly Restricted Data Service (HRDS)

- **Collect, store, process and share highly restricted data**
  - HRDS typically supports projects working with **personal** (e.g. patient data) and **commercially sensitive data**.
  - HRDS comprises 4 services:
    - **Data Save Haven (£)** – designed to meet the requirements of 3<sup>rd</sup>-party data providers such as NHS Digital.
    - **REDCap (£)** - secure web application for building and managing online surveys and databases, suitable for longitudinal studies.
    - **SafePod (FREE)** - a secure physical room for working with data providers via the national SafePod Network (SPN).
    - **Secure Web Platforms (£)** - secure cloud hosting for bespoke web and mobile applications.

# Research Software Engineering

- Our **Research Software Engineers (RSEs)** can:
  - Advise on languages and technologies;
  - Train you in software engineering techniques and best practice;
- Our RSEs have a wealth of experience in a **wide range of technologies:**

Data  
Visualisation

GPU Software

Web  
Applications

Mobile  
Applications

Super-  
computing  
Applications

Databases

Data Science

# Arts, Languages and Culture Case Study

## Developing New Ways of Comparing Ancient Documents

- Approached by a Prof from Classics, Ancient History & Egyptology who had scanned copies of manuscripts containing Arabic translations of the Hippocratic Aphorisms
- Copies had been annotated with commentaries from various other people who had worked with them over the years
- Converted from plain images to a text-based format and then into XML files
- Files were then in a standard format for uploading to digital libraries allowing them to be easily compared
- RSEs wrote bespoke software to do this and it is now being used as a teaching tool in the Humanities



# Social Science Case Study

## Mobile Apps for Mental Health

- Worked with a Social Science researcher to design a phone app to replace a paper-based system.
- The app monitors and supports the mental and psychological health needs of people working in physically extreme conditions where they may also be subject to social and psychological pressures.
- Based on the participants answers, the app suggests suitable coping strategies or interventions.

# Environment, Education & Development Case Study

- **Movement and Gathering Patterns Mobile App**
- The Mobile Development Service worked with a SEED researcher to make a new version of his old mobile app so it was fit for purpose and complied with Google Play and Apple store regulations.
- The new app collected data related to people's movements in Chile to see if those sharing the same country of origin tended to congregate in groups whilst living and working abroad.
- The researcher accessed the data collected by the app through a web interface that we built and hosted for them.

# AMBS Case Study

- **Recovery, Renewal, Resilience website**
- To produce a public facing website containing a library of video lessons for organisations across the world to develop successful plans to recover from Covid
- Required the building of a database for over 623 lessons from 58 countries grouped by 6 topics
- The lesson collection has the following features:
  - Summary of the current collection, other relevant info
  - Search facility for lessons, by topic, country, keyword, and free text
  - Display lesson details in an expendable box
  - Include links pointing to other source sites/files

# Research Software Engineering

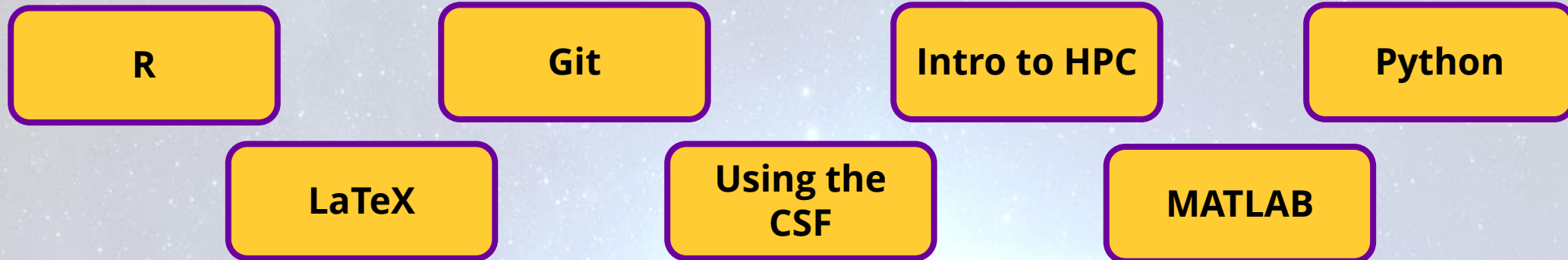
- **Research Application Support**

- Is your research stalled because you can't get an application to do what you want?
- Contact the Application Support Team for **on-demand assistance**.
- They can help with:
  - Advice on research applications
  - Help with installation and licensing of research applications
  - Help with compiling open-source applications
  - Small scale code review for your own scripts/applications

# Research IT Training

- **IT Training**

- A comprehensive program of **free training courses** all year round including:



- But we have a wide range of expertise in many other areas!
- Signpost researchers and PGRs to training provided externally by organisations such as the [Software Sustainability Institute](#) (SSI) and [N8 Centre for Computationally Intensive Research](#) (N8 CIR).

# Join the Community!

- **Computational and Data Intensive Research (CaDiR)**

- Dedicated Teams space for special interest and user groups from across the university open to all researchers and PGRs
- A place to connect and seek advice from your peers and colleagues
- Current groups include:
  - Data Stewardship
  - R User Group
  - Manchester Research Software Community
  - And many more!



# Next steps

1. Get in touch if you need our help about anything Research IT related – <https://research-it.manchester.ac.uk/contact/>
2. Sign up for our newsletter to be kept up to date about all our latest news – [www.eepurl.com/b0uwDv](http://www.eepurl.com/b0uwDv)
3. Follow us on X (@UoM\_eResearch) or BlueSky (@uomresearchit.bsky.social) for case studies, events, help sessions training announcements and much more!
4. Pop into our fortnightly virtual help sessions to ask any questions about anything Research IT related - <https://research-it.manchester.ac.uk/events/>