



UCT eResearch Services

A few tools which can make a researcher's work *much* easier

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What is eResearch?

- eResearch is a term that refers to the use of **advanced** information and communication technologies (ICT) to support and enhance research activities in various domains.

<https://uct.ac.za/ereseach>

- eResearch can involve aspects such as data management, data analysis, data sharing, data visualisation, collaboration, communication, and dissemination.

<https://ereseach.uwc.ac.za>

- eResearch can also enable **new forms of research** that are not possible or feasible without **ICT**, such as big data, artificial intelligence, simulation, and digital humanities

<https://hsrc.ac.za/divisions/ereseach-knowledge-centre>

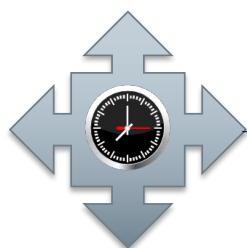
Courtesy of ChatGPT;-)

Responding to an ever-changing research world

Researchers rely much more on ICT services, whether as hardware and software for research data management and knowledge discovery or to find new collaborators and funding opportunities

KEY CHANGES

IMPLICATIONS/NEEDS



Pace and scale increasing

- Technology is accelerating the pace and scale of research
- Large-scale data requires more structured data management approach

Provision of Data Storage, Management and Sharing Tools



New tools and methodologies

- More powerful instruments (e.g. Artificial Intelligence)
- Digital recognition of text, speech and imagery
- Crowdsourcing (Citizen Science)

Expert guidance on leveraging new approaches



Internationalisation

- Research funding / status is increasingly based on strong international collaborations
- New funding instruments to address Global Challenges
- Research is conducted in international infrastructures







Capability to establish and support long-term complex collaborations

Why is eResearch ever more relevant?



The six Vs of big data

Big data is a collection of data from various sources, often characterized by what's become known as the 3Vs: *volume, variety and velocity*. Over time, other Vs have been added to descriptions of big data:

VOLUME	VARIETY	VELOCITY	VERACITY	VALUE	VARIABILITY
The amount of data from myriad sources.	The types of data: structured, semi-structured, unstructured.	The speed at which big data is generated.	The degree to which big data can be trusted.	The business value of the data collected.	The ways in which the big data can be used and formatted.
					

"Your Data Is Worth Nothing Unless You Use It" (Forbes)

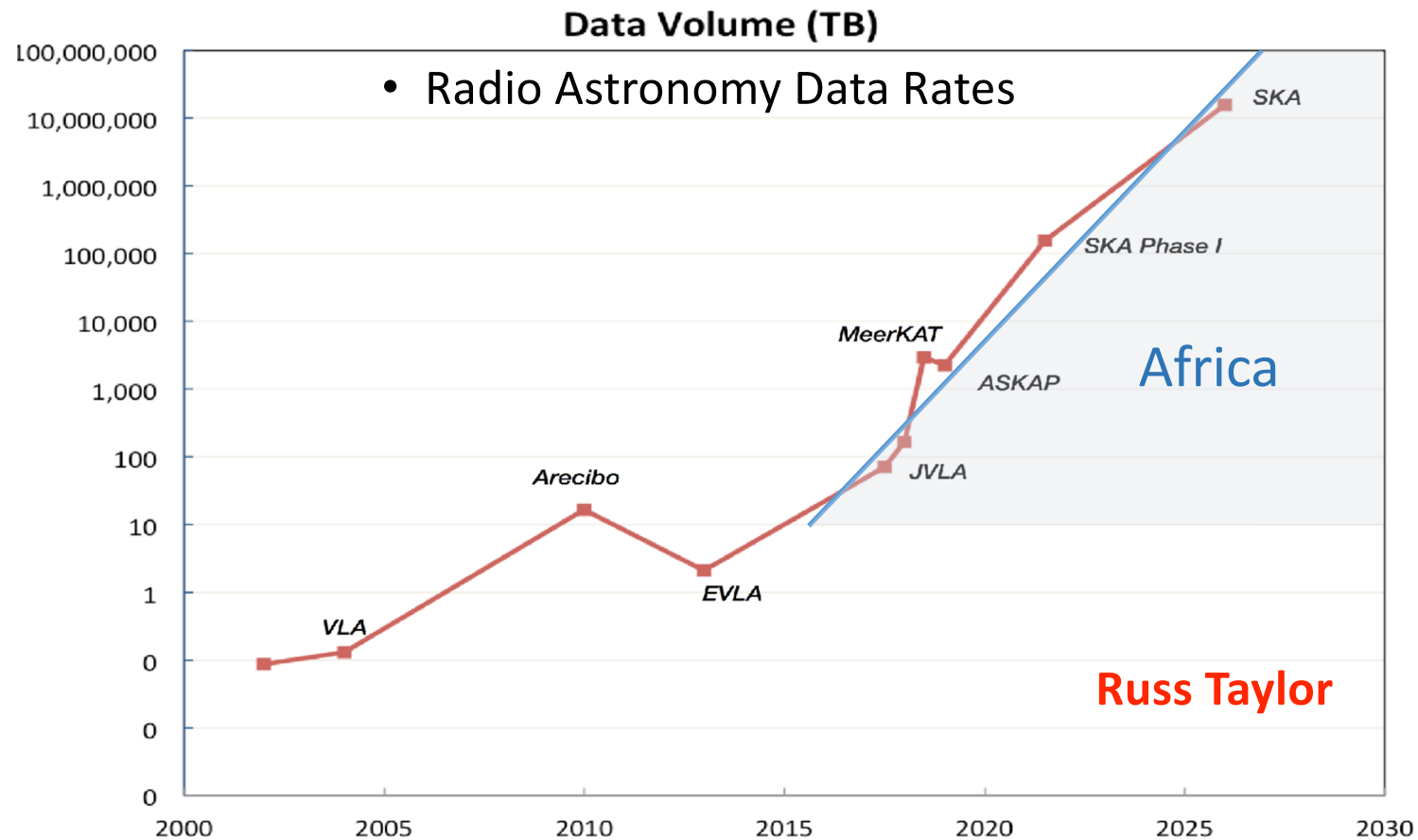
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Upcoming Big Data Challenges



UCT eResearch & “Big Data” Services



We provide/support the following:

- UCT Research Computing
- UCT Research Data Storage
- UCT Research Data Transfer
- IDIA / ilifu Cloud & Science Gateway
- IDIA Vislab (Cloud & VR DataVis)
- NICIS (CHPC/DIRISA/SANREN)

We also organise/provide:

- RDM & RSE Advocacy & Consulting
- Coding & AI/ML Training Workshops
- Funding Proposal Budgeting / DMP

Is eResearch all about Big Data? Not at all!

- 1) Research Methodologies
- 2) Research Ethics (e.g. POPIA)
- 3) Research Collaboration Tools
- 4) Research(er) Visibility
- 5) “Small” Data (Context) still matters!
- 6) Data is not “just” Data anymore
(real-time, hardware, software, etc)
- 7) Any Data must be FAIR to be of use



Your Research Project Lifecycle



How can I access UCT eResearch Services?



- 1) Just Google (or ChatGPT;-) it!
- 2) <https://www.uct.ac.za/ereseach>
- 3) e-mail us at ereseach@uct.ac.za
- 4) Log a call at <https://uct.service-now.com/sp>
- 5) RO, ICTS, Libraries, etc. Web Pages
- 6) Take notes and save them in the cloud (e.g. on Microsoft Teams/Office/OneDrive)
- 7) Assemble your own Digital Data “Toolbox”
- 8) Try new tools - and create new ones!
- 9) Ask and tell colleagues about them - join online communities and create your own!



A “short” list of useful tools

- 1) [UCT DMP](#) & [OpenAIRE ARGOS](#)
- 2) [UCT HPC Facility](#)
- 3) [UCT Science Gateway](#)
- 4) [Ilifu Cloud Computing Facility](#)
- 5) [IDIA Science Gateway](#)
- 6) [CHPC Lengau Cluster](#)
- 7) [UCT Research Data Storage Tools](#)
- 8) Microsoft OneDrive & Google Drive (UCT)
- 9) [Ibali](#) Digital Collections (UCT)
- 10) [ZivaHub](#) Digital Repository (UCT) & [FigShare](#)
- 11) [DIRISA Data Deposit Tool](#) (CSIR)
- 12) [Zenodo](#) Digital Repository (CERN)
- 13) [GitHub](#) / [GitLab](#) / [BitBucket](#) Software Repositories
- 14) [ORCID](#) / [Google Scholar](#) / [Scopus](#) / [WoS](#)
- 15) FAIR Research “Outputs” (Watch out for [DOIs!](#))





How can I get started?

Ask yourself what your **interests and needs** are now (and might be in the future)

<https://uct.ac.za/eresearch/online-courses>

<https://icts.uct.ac.za/services-training/self-training-resources>

Ask ChatGPT: What are the best self-training resources for developing digital research skills?

Asking your peers (and slightly more senior people) is always very helpful



How Good is “Good Enough”?

That depends on your professional and personal goals in the short/mid/long-term

<https://carpentries-lab.github.io/good-enough-practices>

<https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1005510>

Whatever your goals, Continuing Professional Development in (e)Research is key

Asking your peers (and slightly more senior people) is always very helpful



Thanks for listening!

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