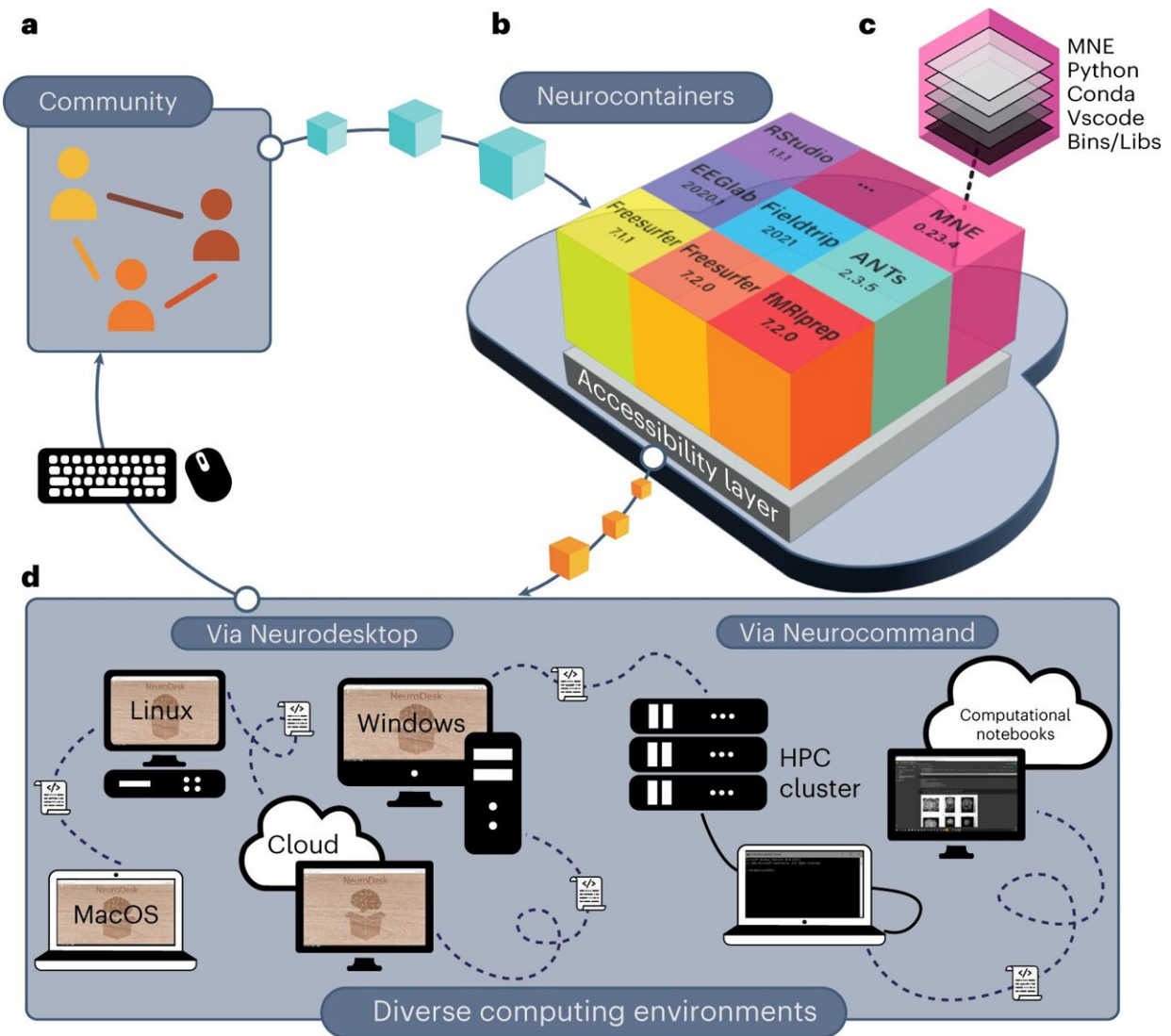


# A new platform to fast-track lifesaving brain research

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a, Neurodesk is built by and for the scientific community, enabling anyone to contribute containers. b, Community-contributed software recipes are

automatically used to build software containers stored in the Neurocontainers repository. c, Each container packages a tool together with all its dependencies. d, Neurodesk provides two layers of accessibility: (1) Neurodesktop: a browser-accessible virtual desktop environment; (2) Neurocommand: a command-line interface that runs the same software containers programmatically. These interfaces allow users to reproduce analyses across computing environments. Credit: *Nature Methods* (2024). DOI: 10.1038/s41592-023-02145-x

An international team led by Australian researchers has developed a platform that could transform neuroimaging data analysis worldwide. The Neurodesk platform will enable scientists to accelerate research on conditions such as epilepsy, dementia, schizophrenia and traumatic brain injury by enabling faster processing and analysis of neuroimaging data.

The research is [published](#) in the journal *Nature Methods*.

Brain research requires the analysis of massively detailed data sets generated by increasingly powerful techniques to measure brain structure and function such as MRI, MEG and EEG. Developed by Swinburne University of Technology, University of Queensland, and University of Sydney, Neurodesk addresses the analysis challenges presented by these [data sets](#) through an [open-source platform](#) that can be installed and operated anywhere.

"Our platform makes a continuously expanding range of cutting-edge analytic techniques and software accessible to researchers across the world," says Swinburne project lead and Director of Neuroimaging Professor Tom Johnstone.

"It allows researchers to leverage the most powerful supercomputers and cloud platforms on an individual researcher's laptop, and is easy to install and update."

Creating Neurodesk required an international team with expertise across signal and image processing, medical physics, software engineering, AI and machine learning. The open-source Neurodesk platform is designed to support transparent and reproducible research, so that scientists can share and cross-validate their analyses and accelerate research in critical areas.

With extra funding, the team is looking to broaden its scope to other neuroimaging methods and applications that will fast track the process of diagnosis and treatment for brain related illnesses.

**More information:** Angela I. Renton et al, Neurodesk: an accessible, flexible and portable data analysis environment for reproducible neuroimaging, *Nature Methods* (2024). [DOI: 10.1038/s41592-023-02145-x](https://doi.org/10.1038/s41592-023-02145-x)

Provided by Swinburne University of Technology

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