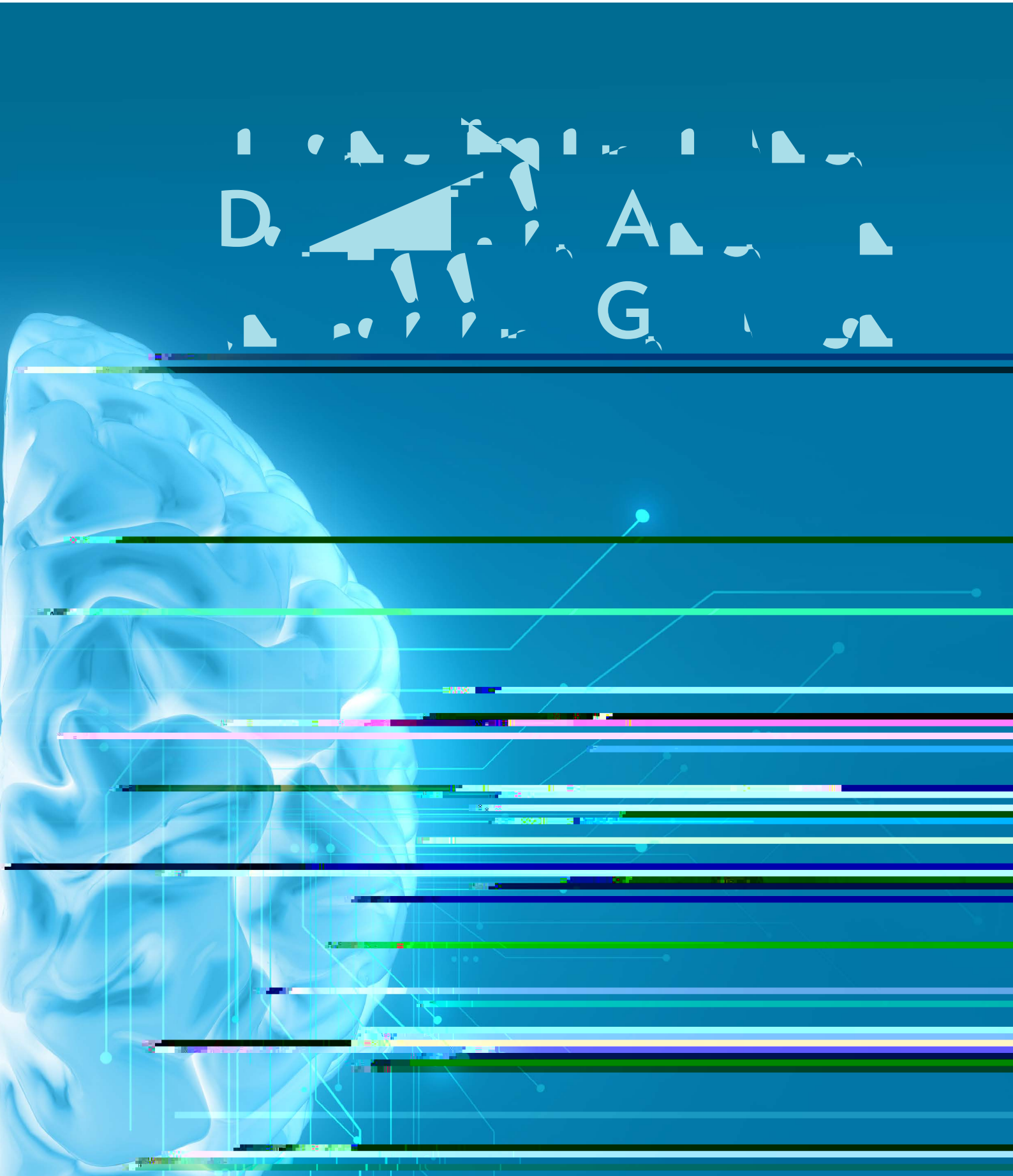
CANBERRA



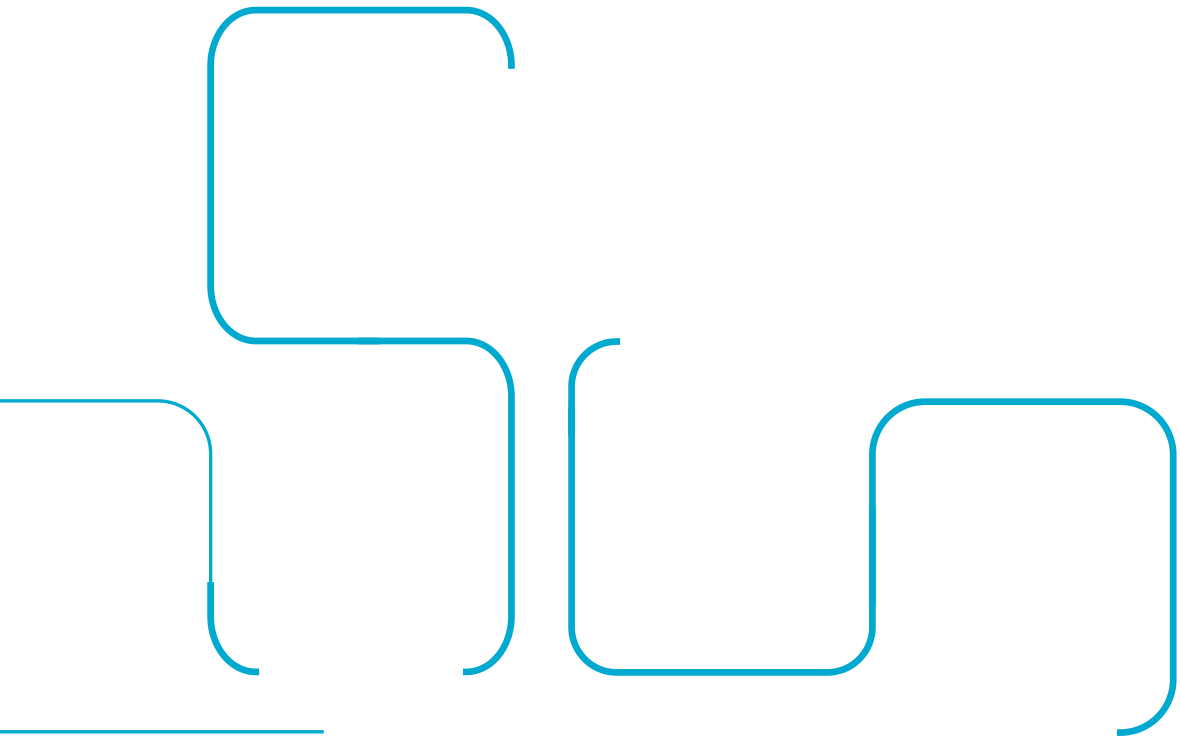
This report was created in collaboration between:

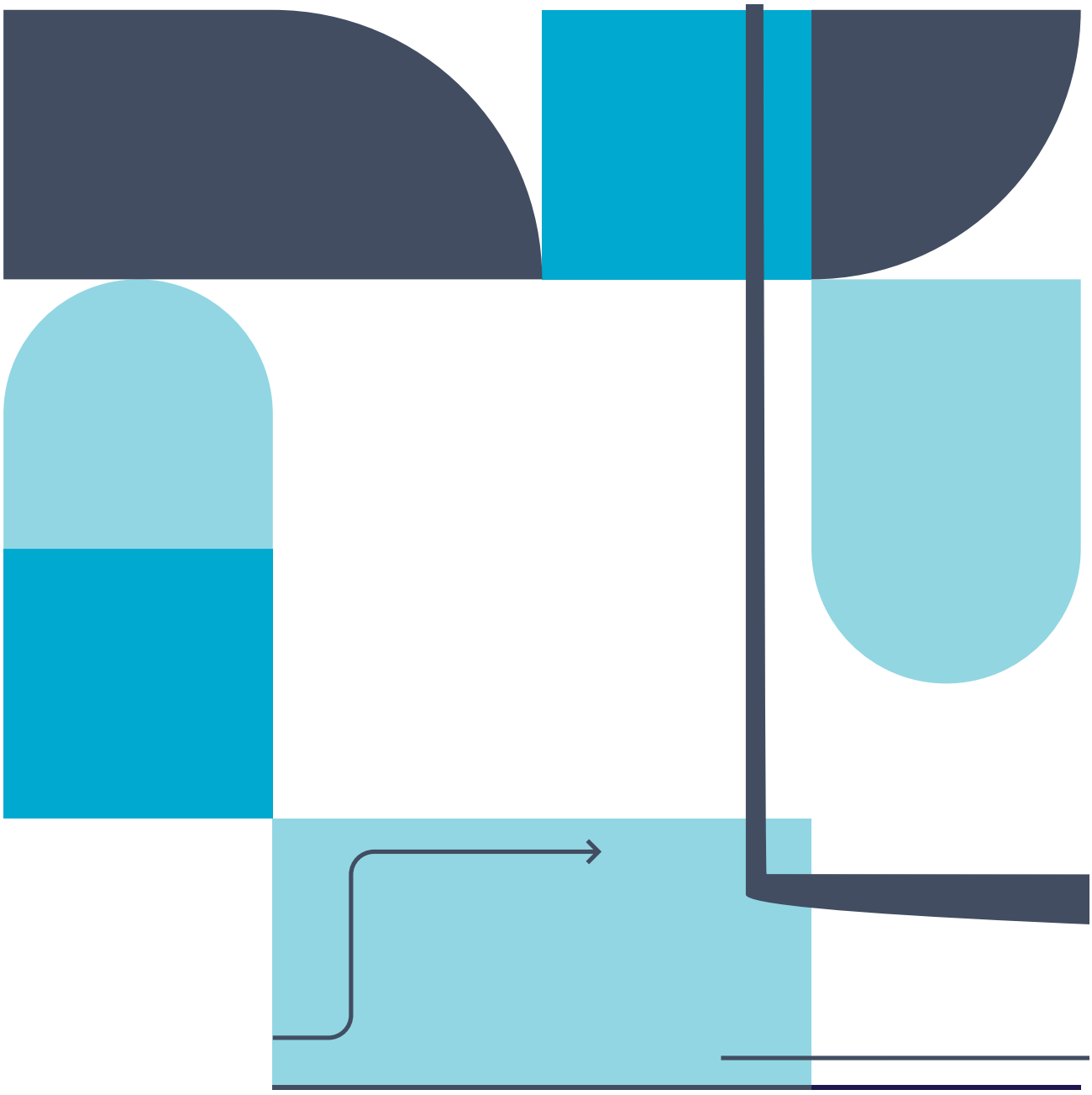
Discipline of Psychology, School of Health Sciences, Faculty of Health

Office of the Dean
Australian National Centre for the Public Awareness of Science, College of Science
School of Computing, College of Engineering, Computing and Cybernetics

C E

E [illegible]	4-5
[illegible] A [illegible]	6-7
A B [illegible]	8-9
A B D A [illegible]	10-11
[illegible]	12-13
A [illegible] A [illegible] D [illegible] G [illegible]	14-20
A [illegible] F [illegible]	21-23





A B

A - . G - . G (C ., 0). - . (., 0). (A P , 0). (. ., A , 01 & , 0), (., 0). -

P A P A P C (A P AC). A P AC

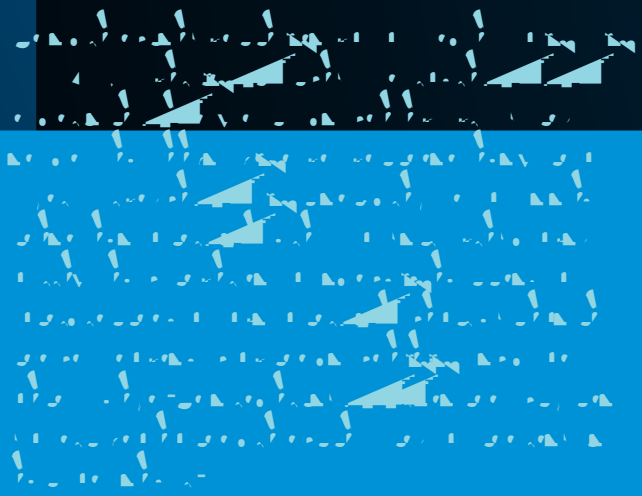
ABOUT

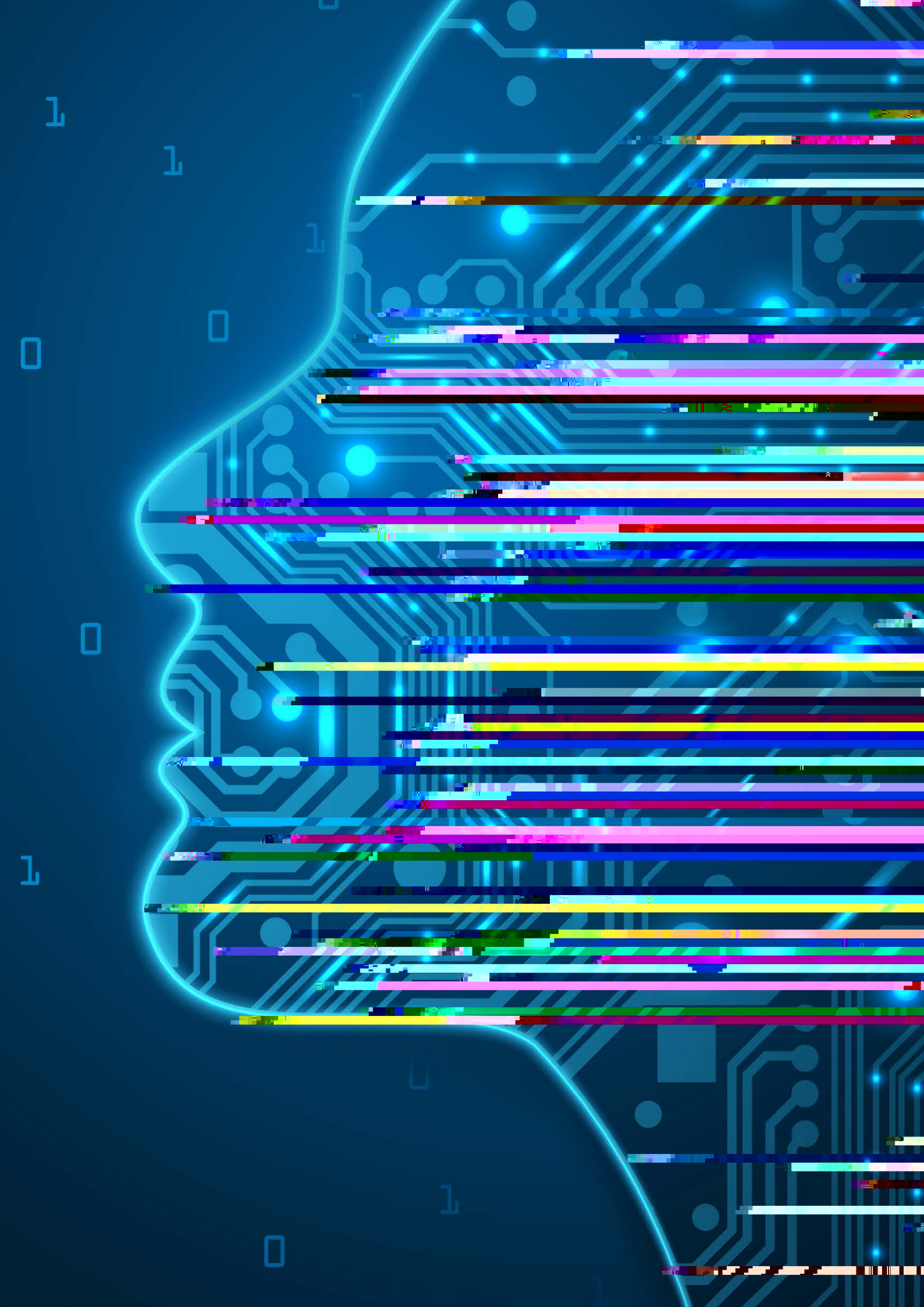
The recent availability of very large data sets, and the use of ML and NLP to identify patterns within such data sets, provides a novel means of answering complex questions that were previously impossible to answer due to the huge time commitments necessary. Job ads are a window into the workforce. As a 'wish list' from potential employers looking for new hires, job ads are a rich data set for potential analysis of employer needs and desires. Crucially, job ads provide a future-facing evaluation of potential job roles, by asking what jobs graduates could hold, rather than being restricted to jobs currently or previously held by graduates.

Members of the current research team (IM, WG, HS) previously developed an ML/NLP job ad sorting machine to identify the nature and extent of the job market for PhD graduates (PostAc®; Mewburn, Grant & Suominen, 2017). That project demonstrated that the machine was able to 'read' a large corpus of job ads and categorise them according to their degree of desired research skills, based on a custom-designed schema denoting skills and attributes of PhD graduates. The outcomes from that project included extensive mapping of industry demand for PhD graduates, identification of new 'hidden' job markets for PhD graduates and trends analysis of changes in industry demand for PhD graduates. The machine and associated outcomes have, and continue to be, instrumental in reshaping understanding of PhD skills and workforce opportunities both within the tertiary sector and beyond. Findings from the PostAc® project have been used to develop a tool for PhD students to explore their career options and assist universities to develop appropriate activities and opportunities to enhance employability.

They have also been widely cited in publications, thereby informing systematic reviews (e.g., Chen et al. (2023), Mezhoudi et al. (2023), Pinto et al., (2023) and Signore et al. (2023)) and original studies (e.g., Papoutsoglou et al. (2019), Conejero et al. (2021), Mantai & Marrone (2022), and O'Connor et al. (2023)), as well as university reforms and policy pieces in Australia (e.g., McGagh et al. (2016), McCarthy and Wienk (2019), and the 2020 white paper, titled "Redefining the ANU PhD", by the Australian National University, available at https://services.anu.edu.au/planning-governance/planning-review/redefining-the-anu-phd-white-paper).

Understanding the job market for psychology graduates involves addressing many of the same challenges that were successfully solved in the PostAc® project, including identifying jobs that align in terms of skills but not qualification keywords (PhD/psychology), mapping a range of graduate skills and attributes, and incorporating job roles across a wide range of potential industries.





.1)

,)

,)

P

)

01

02

03

04

AB E - I P DE F ED P E A B E F EE EA G ADUA E A E EC I F C I B CA EG E AI DE E P A B E E E EI A ED E A E AD E ED A U AB E U ADD I A , UA F CA I .

Table U e N He :

. F

-1 . 0( )-1 .1 1 0 1 0. - . ()- . / . 0( )-1 .1 ()- ( ) / -1 . ( ) ( )-10 - - / . (-1 . 0 (. (. ( )-1 D

A. [illegible] F[illegible]

[illegible] P [illegible]

[illegible] P [illegible] C [illegible]

.( ) [illegible] ( ) [illegible]

[illegible] A [illegible]

[illegible]

[illegible]

I [illegible]

D [illegible]

[illegible]

F[illegible]

[illegible] ([illegible])

D [illegible]

E. [illegible] A

A

A

C

E

A

E

E ( )

D

C D

C D

C

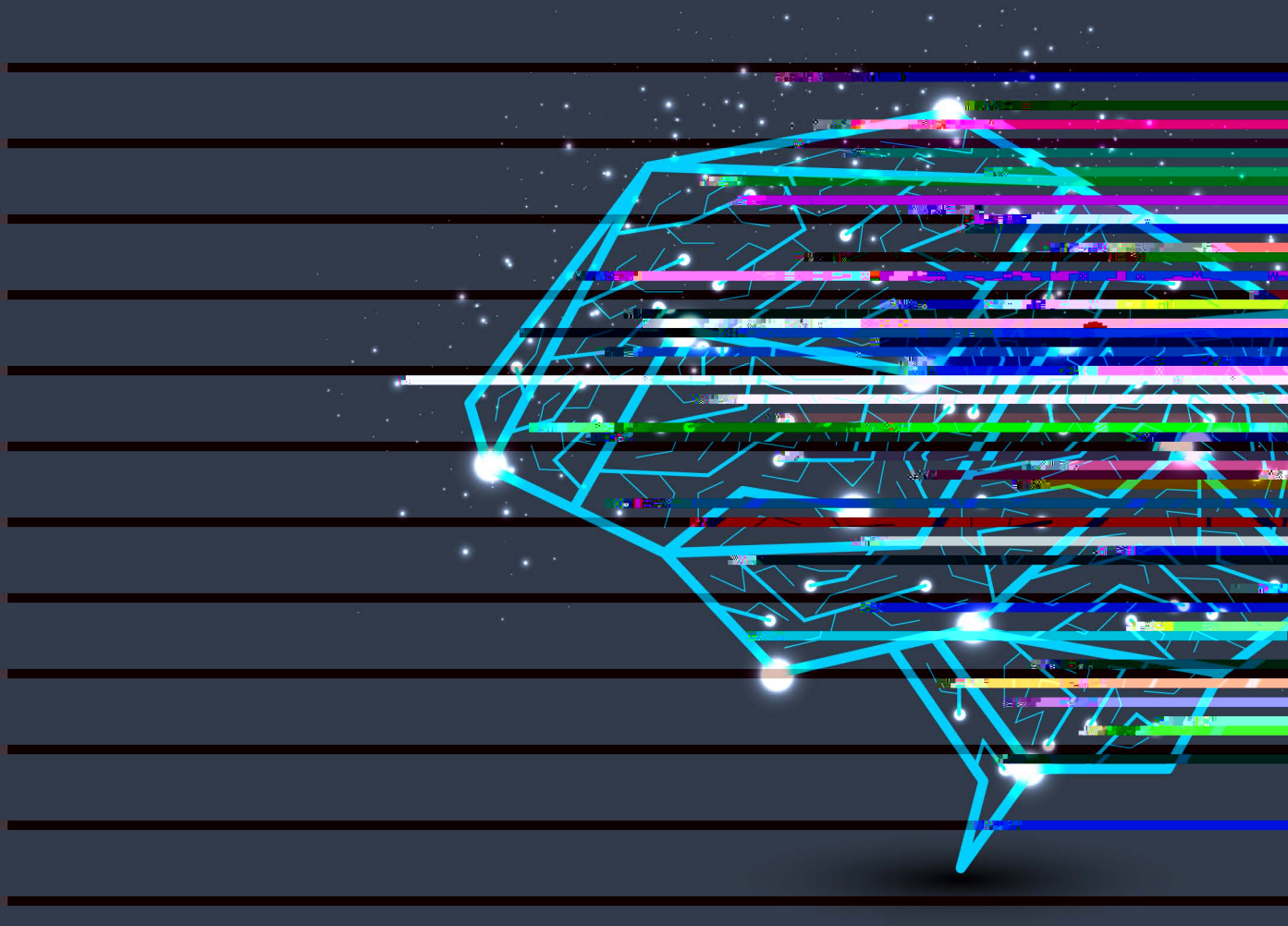
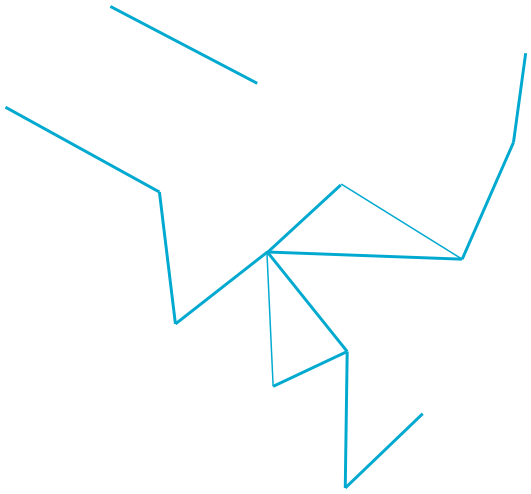
P C

E F

E /

U

E

E

E