

SEAN PETERS

Profile

Software engineer and technical leader who has transitioned into AI safety research. 12 years building systems at the intersection of engineering and research: microkernels, proteomics, cultivated meat, now frontier AI evaluation.

Strongest in ambiguous domains requiring rapid learning. Passionate about growing individuals and building high-performance teams.

Details

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Personal information

Location: **Blue Mountains, NSW**
Citizenship: **Australia**

Education

Bachelor of Computer Science
(1st Class Honours)
University of Western Australia
2010–2013

Skills

- Software engineering
- Technical leadership
- Growing individuals
- Evaluation methodology
- Operating in ambiguity

EXPERIENCE

Lyptus Research (AI Safety)

2025–present

Founding

Left industry role to pursue AI safety research full-time. Founding early-stage research group focused on dangerous capability evaluation.

- Applied METR's Item Response Theory methodology to offensive cybersecurity, measuring AI capability growth (~5-month doubling time); now extending with broader benchmarks and rigorous human baselines.
- Designing attack selection evaluation framework using Bradley-Terry models to measure whether AI can identify favorable conditions for covert action.
- Coordinating three-person research team: full-time research engineer, cybersecurity expert volunteer, plus contracted security specialists.
- Secured ~\$115k AUD in Manifold grants to fund research program.

Vow

2021–2025

Senior Engineer → Engineering Manager → Staff Engineer

Australia's leading cultivated meat company, now operating world's largest continuous cell culture bioreactors (20,000L). Novel domain with no existing playbook.

- Led and was primary contributor to core R&D platform (Ranger); grew into company-wide infrastructure for labs and manufacturing.
- As Engineering Manager (2 yrs), led 5-person team. Full ownership of software engineering strategy—operated like a startup within a startup, setting direction in a fast-moving environment.
- Strong focus on growing individuals. Engineers I managed have gone on to lead teams and found companies.
- As Staff Engineer, handled high-stakes architectural decisions (multi-device automation, safety-critical systems) while coaching my successor through leadership transition.

Children's Medical Research Institute

2018–2021

Software Engineer

Developed data-warehousing, QC, and analysis tooling accelerating cancer-research pipelines.

Atlassian

2015–2017

Software Engineer

Built internal monitoring, logging, and performance services on AWS for cloud products.

Data61 / NICTA

2013–2015

Research Engineer

Benchmarked and optimised multicore seL4 microkernel variants; low-level concurrency and networking work.

ICRAR (Square Kilometre Array)

2013

Research Intern / Honours Student

Image compression research for radio astronomy data; built tools to convert large spectral image cubes between volumetric formats. Led to honours thesis on JPEG2000 lossy compression.

RESEARCH & PUBLICATIONS

AI Safety

AI Task Length Horizons in Offensive Cybersecurity (2025)

sean-peters-au.github.io

Measuring Attacker and Monitor Capability, Task Bias, and Attack Selection (2025, in progress)

sean-peters-au.github.io

Prior Research

A Case Study and Methodology for OpenSWATH Parameter Optimization Using the ProCan90 Data Set

Peters S. et al., *Journal of Proteome Research*, 2018 | [doi](#)

For a Microkernel, a Big Lock is Fine

Peters S. et al., *APSys '15*, 2015 | [doi](#)

The Impact of JPEG2000 Lossy Compression on the Scientific Quality of Radio Astronomy Imagery

Peters S., Kitaeff V., *Astronomy and Computing*, 2014 | [doi](#)

Improved Identification and Quantification of Peptides in Mass Spectrometry Data via CRANE

Seneviratne A. et al., *Journal of Proteome Research*, 2021 | [doi](#)