

Inaugural Impact Report: Growing Roots



Critical Digital
Infrastructures
and Interfaces



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Acknowledgement of Country

Deakin University acknowledges with deep respect the Traditional Custodians of the lands and waters where our campuses are located and where we conduct our business—Wadawurrung Country and the Wurundjeri of the Kulin Nation.

We pay our respects to their Ancestors and Elders, past, present, and those to come; and, celebrate the enduring legacy of wisdom, knowledge, and storytelling that has flowed through these lands for tens of thousands of years. We stand on these ancestral lands as partners in learning, inspired by the rich traditions of the

First Nations Peoples and dedicated to creating a future that acknowledges and celebrates the depth of Australia's Indigenous heritage.

Together, we strive to foster communities that respect the Earth and each other, guided by the spirit of reconciliation.

Cover image: *Our Wired City*, Luke J Heemsbergen

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1. Executive Narration

The inaugural story of the Faculty's Critical Digital Infrastructures and Interfaces (CDII) research group is one of collaboration, innovation, and purposefully growing roots. Emerging from a need to critically engage with the digital systems shaping our world, CDII has cultivated a vibrant research culture that spans disciplines, institutions, and continents. At its heart, CDII interrogates the norms of digital life—both questioning how they arise and proposing equitable, sustainable alternatives. This report highlights growing new roots of: global collaboration, interdisciplinary innovation, Faculty capacity, and public engagement and impact.

CDII launched in 2023 and has become an important interdisciplinary capability at Deakin University. This capability transgressed disciplines to include epidemiologists, performance artists, and AI experts across Deakin working with researchers in the faculty. Since launch, CDII has started to establish itself as a leading entity in examining the multifaceted impacts of digital technologies on societies both nationally and internationally, with colleagues working with us from four continents, and engaging emerging academics across Australia.

CDII is developing a rich program of grants, events, visitors, and engagement activities to support digital humanities and science-literate social research into the digital systems that undergird modern life. Our socially engaged communication makes an impact through engaging diverse audiences in a diverse range of events (i.e., symposia, invited guest talks, public art exhibitions, and seminars), output, and online engagement with global audiences. Internally, its support for early-career researchers and Higher Degree by Research students fosters a culture of mentorship and innovation, driving impactful work across traditional and non-traditional outputs.

CDII members have invested energy and resources to create a center of gravity for research on emerging socio-technical challenges faced in Australia and beyond, and these investments are now returning results. CDII leadership is invested in growing researchers through thinking and acting together to enable Deakin's intellectual and material environments to expand capacity for research. CDII's multidisciplinary platform is designed to address contemporary societal challenges by uncovering the hidden power dynamics of digital technologies and fostering critical, decolonial, and innovative research approaches. The networks we have created, interests and capacities we have fostered, and groundwork we have laid, are now poised to execute on a longer and larger program of work via nationally interlinked project funding applied in 2025 and beyond.

While many of our projects and members are at home in the disciplines of ‘media’ or ‘communication,’ our outputs, collaborations, and goals paint a richer picture that shows an interdisciplinary tapestry of knowledge generation. For instance, CDII’s emergent focus on “bossware” - including two Q1 publications from separate groups in 2024 from the distinct disciplines of Surveillance Studies and Critical Management Studies, is focused on new and collaborative empirical research planned for 2025. Likewise, our recent work on COVID apps reflects a broad understanding of public health infrastructures in the digital age and has twice been published in *Nature HSSC*. At the same time, our NTROs have been included in the National Gallery of Victoria’s (NGV) Melbourne Design Week and have built spaces that encourage artists like Tyson Yunkaporta to exhibit with our HDR students’ work.

2.4 Partnerships

CDII’s story so far is one of growing partners. Our work brings together individuals and groups with similar research interests both inside and outside Deakin through annual workshops and symposia, bi-annual research events and quarterly programs. Our approach ensures cross-pollination of diverse perspectives on digital infrastructures and interfaces, allowing us to build a collaborative and robust research culture.

The research culture that we have grown is also now extending outside of Deakin, based on our outputs, with national academic partners like RMIT and USYD collaborating with joint funding arrangements for national events. At the same time, we focus locally through engaging council contract research (i.e., Wyndham City Council).

In addition to institutional partnering, individual experts have been attracted to CDII. For example, an invitation to privacy scholar, Dr Ausma Bernot, to present their research to CDII in 2023 has subsequently led to a 2025 collaboration with Dr Bernot, researchers in The University of Melbourne Law School and the CDII on Malicious Large Language Models (MLLMs), which will be fleshed out for funding calls and international partners in 2025.

CDII serves as a node for international and national expertise. Work with Payal Arora in Melbourne in 2024, and a separate symposium on Digital Sovereignities hosted with the University of Sydney that same year has directed CDII to lead a DP26 EOI, with plans to build team and record of accomplishment into 2025.

Previous research partners and collaborators include:

- Victorian Department of Health
- City of Melbourne
- Australian Communications Consumer Action Network (ACCAN)
- Meltwater
- Digital Futures

3. Research Outcomes and Future Trajectory

3.1 Grant Applications and Secured Funding

External Funding

Over the 2023-2024 period, the Critical Digital Infrastructures and Interfaces (CDII) group has applied for over **\$600,000 in Category 2-4 grants**, leveraging partnerships with external academic and industry collaborators. This effort has already yielded **\$102,000 in confirmed external project funding**, highlighting the group's growing ability to attract and secure competitive resources. These successes are complemented by a robust pipeline of planned grant submissions, including our inaugural **Australian Research Council (ARC) Discovery Project submission (DP26)**. This submission reflects a direct outcome of CDII's targeted strategy to build and nurture relationships with (inter)national scholars and collaborators to grow our researchers and enable global reach from our local research environment.

CDII successful grants

- Wyndham City Council (Cinque, \$24,915 AUD) Concluded March 2024. The 97-page research report was extremely well received.

"Thank you for all your efforts and hard work, the digital report looks great!! We are really pleased and will use this for our forthcoming meeting at Council"

(Brendan Quirk, Innovation Hub Advisor, Economy Design & Place, SPARK Innovation Hub, Wyndham City Council)

- Ongoing Grant with ACCAN (Heemsbergen, Warren, Mann 75,000 AUD)

Submitted grants:

- Minderoo (\$99,000 AUD); unsuccessful as Minderoo shifted away from technology to ecology concerns.
- Internet Society Foundation (\$500,000 USD); near miss.
- 2x National Intelligence Discovery Grants (NIDG), not selected.

Internal Funding

The internal CDII grants scheme is designed to support talented early- and mid-career researchers (EMCRs) at Deakin and mentor HDR colleagues into impactful outputs. Entrepreneurial HDRs and ECRs are encouraged to 'pitch' projects to membership, which rank-orders their preferences to our funding pool. The funding rounds were successfully launched in 2023 and continue to support critical individual and interdisciplinary research. In the 2023 round, 6 seed funding grants were awarded to a strong pool of interdisciplinary projects.

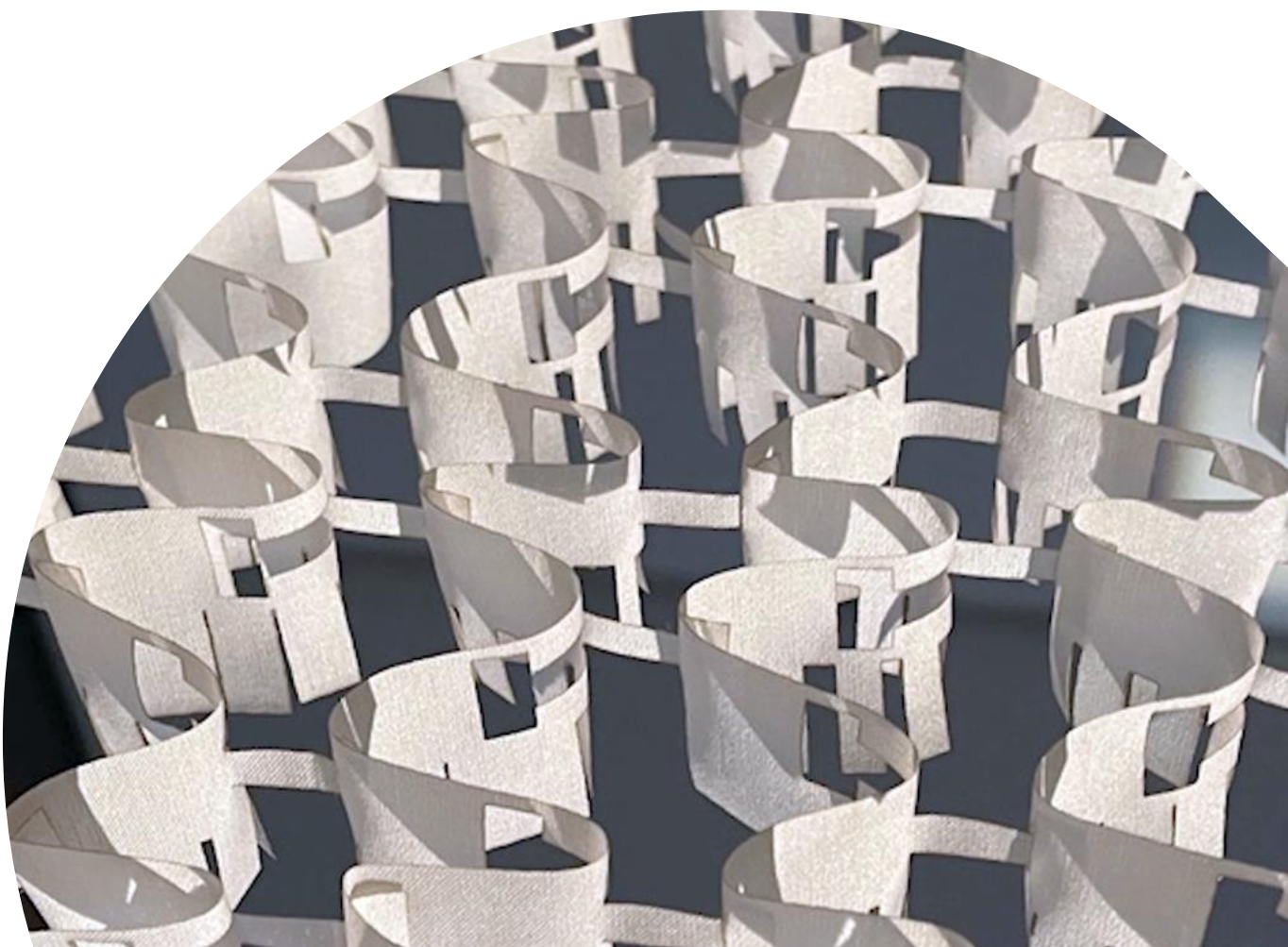
Given the variable time between seed project funding and peer reviewed outputs, outcomes such as major project development or external funding, the CDII grants program remains in an emerging phase. Nonetheless, the CDII grants scheme affords a robust return on investment, growing consistently from year to year.

CDII Seed Funding 2023

- Fred Rodrigues (HDR) for data collection leading to a technical paper and research assistance towards a forthcoming paper on synthetic ornithology.
- Imogen Richards (ECR) book support on editing her book for publication.
- Anne Scott Wilson (MCR) for towards her project *Distributed Doubles*.
- Ritchie Barker (MCR) towards research assistance.
- Yika Gu (HDR) for their work on Fake News, Gender, and Machine Learning.
- Lauren Bevilacqua (ECR) for research assistance and data collection toward her projects on Income and Identity via Patronage Platforms.

CDII Seed Funding 2024

- Julio Escadero (HDR) towards producing his award-winning creative work for EcoDigital Futures in Melbourne Design Week.
- Mariam Ikram (HDR) for research assistance to undertake a literature review of digital literacies and AI. They will be working with Toija Cinque and partnering with Sacred Heart Secondary School to deliver a bespoke program to develop digital literacy and skills.



4. Events and Growing Research Culture

CDII's diverse program of events displays its dedication to fostering researchers, collaborative thinking, global impact, and supportive environments. From Stelarc's exploration of embodied digital-physical interfaces to Payal Arora's insights on inclusive technologies in the Global South, these initiatives bridge disciplines and spark innovation from our members and the world they act on. Through masterclasses, public talks, and exhibitions like *EcoDigital Futures*, CDII has advanced critical discussions on sustainability, digital sovereignty, and interdisciplinary research. By hosting international scholars, engaging with innovative methodologies, and mentoring early career researchers, CDII strengthens its academic networks and positions itself as a leader in addressing global digital challenges.

Below, we list the events that have been created through energy and organisational work of our core team.

4.1 Excess and Indifference: Embodiment Aliveness and Agency

Date: 10 October 2024

Event: International artist talk by Stelarc

Discussant: Professor Stefan Greuter.

The body in excess has become a contemporary chimera of meat, metal, and code. Subjectively, the body experiences itself as an extruded system, rather than an enclosed structure. We continuously slide between offline and online worlds, navigating from physical nano-scales to virtual non-places. The body increasingly inhabits abstract realms of the highly hypothetical and of streaming subjectivity. The self becomes situated beyond the skin, and the body is emptied. But this emptiness is not an emptiness of lack but rather a radical emptiness through excess. An emptiness from the extrusion and extension of its capabilities, its augmented sensory antennae, and its increasingly remote functioning. What becomes important is not merely the body's identity, but its connectivity – not its mobility or location, but its interface.

Outcome: Fostered further connection between Stelarc and CDII members in the Deakin Motion Lab.

4.2 Emotional Experience of Privacy and Ethics in Everyday Pervasive Systems

Date: 11 June 2024

Event: Guest talk

Speaker: Associate professor, Rebekah Rousi, University of Vaasa. Rebekah Rousi holds a PhD in Cognitive Science with extensive experience of research and teaching in Human-Technology Interaction. Her main research specialty is in User Experience and human experience (semiotics, communication, logic, culture) with technology. Rousi's research interests include design; embodied interactions and experience; human-robot interaction; human-AI interaction; posthumanism; environmental interactions (e.g., elevator and architectural experience); ethics; emotions; trust; and sustainability. Rousi also has a

background in cultural studies, critical theory, and contemporary art. She has trained and practiced as a performance artist and printmaker since 2003.

Details: Rebekah gave a presentation on the BUGGED project, its main research questions and structure, and what has been done so far in terms of empirical studies and publications. Rebekah also introduced their HCI lab—the VME Interaction Design Environment. VME is a low threshold multi-disciplinary human-computer interaction lab housing virtual and augmented reality equipment, game development equipment and software, as well as biometric equipment and software. VME focuses on human-computer interaction research in all contexts. This entails that we have active collaboration with other labs and research groups from across the university, including Management, Marketing, Communication Studies, and Technology and Innovation. See more about the project [here](#).

Outcomes: Set up interrelations between CDII and AOIR panel 2024

"I found Rebekah's work fascinating and will definitely be incorporating their research into my PhD" (Aiden, HDR attendee)

4.3 From Pessimism to Promise: Lessons from the Global South on Designing Inclusive Tech

Date: 13 June 2024

Event: A public talk to kick off Day 1 of A Festival of Ideas

Speaker: Payal Arora, Professor of Inclusive AI Cultures at Utrecht University and Co-founder of FemLab

Details: When it comes to tech, the mainstream headlines are bleak: Algorithms control and oppress. AI will destroy democracy and our social fabric, and possibly even drive us to extinction. While legitimate concerns drive these fears, Payal Arora points out that we need to equally account for the fact that tech affords young people something incredibly valuable—a rare space for self-actualisation. Outside the West, where most of the world's youth reside, there is a significantly different outlook on tech: in fact, there is a contagion of optimism toward all things digital.

These users, especially those in marginalised contexts, are full of hope for new tech. As AI disrupts sectors across industries, education, and beyond, who better to shine the light forward, Arora argues, than the Global South, the navigator of all manner of forced disruptions, leapfrogging obstructive systems, norms, and practices to rapidly reinvent itself?

Outcomes: Cinque has been invited to be an international research partner in the [Inclusive AI Lab](#) led by Payal Arora and Laura Herman, head of AI research at Adobe. Industry consortium members include Google, Adobe, IKEA, and Etsy.

There is significant scope to incorporate cross-Faculty supervision teams. For example, between CDII, alongside colleagues from the Science and Society Network (SSN) and the Data Cultures stream Cinque leads, which includes members from the Schools of Information Technology (SIT), Business and Law (B&L), Humanities and Social Sciences (SHSS), and Education (SoE). Moreover, this initiative will offer robust support and mentorship opportunities for Early Career Researchers (ECRs), fostering research and supervision capacity in their fields.

4.4 Mapping Technologies of Pessimism, Promise, to (Your) Progress

Date: 18 June 2024

Event: A Masterclass for HDR students and Early Career Researchers hosted by CDII and Society 5.0, RMIT, platforming the work of Payal Arora as part of Festival of Ideas

Details: This Masterclass reflected on Professor Arora's then forthcoming book "Pessimism to Promise," which calls for a radical paradigm shift in the way we think about AI and tech, taking hope and inspiration from the aspirational users of recent technologies around the world. The class offered participants an opportunity to 'unsettle' their own current work based on Payal's continuous research on femtech futures of work and translating values into debiased design for inclusive technologies.

Outcomes: as above

4.5 EcoDigital Futures for the NGV's Melbourne Design Week

Date: 23 May – 2 June 2024

Event: Melbourne Design Week 2024 celebrates design in an annual 11-day program of talks, tours, exhibitions, launches, installations, and workshops across Australia's design capital

Details:

Creative Digital Intelligence is reshaping not only our cultural, social, and economic spheres but also the natural environment. This evolution compels us to re-examine the foundations of our interaction with both the natural and digital realms, particularly concerning our use of natural resources.

The EcoDigital Futures exhibition showcases 360° video alongside immersive digital and creative endeavors by academics and artists in media, communications, and design. The featured works tackle the pressing ecological challenges and ethical considerations embedded within our increasingly digital lives.

Taking inspiration from the principles of 'ecosophy' – a personal philosophy derived from lived experiences with nature – and the deep ecology work of Arne Naess (1990) and Félix Guattari (2000), the heart of this exhibition lies in the artists' innovative use of technology, not merely as tools but as infrastructures and interfaces that foster sustainable and ethical design practices. These practices are not ends in themselves but means to a more profound understanding and rethinking of our interaction with the digital systems that permeate our lives.

By illuminating the omnipresence of data and its potential for creative appropriation, the exhibition reveals the untapped possibilities of digital realms to reflect and enhance our ecological sensibilities. By exploring how human interaction with digital infrastructure can serve as a conduit for critical and creative practices that honour and advance ecological harmony, the exhibition invites visitors to contemplate the role of technology in a sustainable and equitable future. It is a call to action – a reminder that in the quest for ecological balance, creativity and innovation can lead the way in transforming our collective consciousness and societal structures.

Outcomes: Toija Cinque has been invited by the University of Vaasa to Finland to plan for a Biennale Exhibition event in 2026.

4.6 ICA 2024 Post-conference, Sydney: Digital Sovereignty for Whom? Platforms and Infrastructures in a Global Context

Date: 26 June 2024

Event: Bringing together 30 scholars from across five continents, this event was jointly hosted by the Media & Communications discipline at The University of Sydney and CDII. By bringing together researchers from diverse areas, this post-conference aimed to explore a range of inclusive and decolonial approaches to digital platform policy and governance, as well as global perspectives on human rights, state power and territoriality under various digital sovereignty regimes.

Speaker: Dr Jacob Prehn orated on “Indigenous Data Sovereignty, Rights, Power, and Knowledge.” Jacob is an executive member of Maïam nayri Wingara, the Australian Indigenous Data Sovereignty (IDSov) Collective, and a member of the Global Indigenous Data Alliance (GIDA). His Keynote reflected, in part, his work chairing the just released Framework for Governance of Indigenous Data (2024) and set the frame for the remainder of the day of international scholars presenting and workshoping data sovereignty ideas. Jacob’s presentation was livestreamed with 39 viewers.

Details: Digital sovereignty refers to a countries’ autonomy and control over its digital data, systems, and infrastructures. It is a term that has been deployed widely—by liberal states to assert citizens’ rights over the data they produce and by authoritarian states to justify surveilling and controlling their populations. At the same time, flows and forms of digital life offer new constructions of territoriality, governance, and identity, on more personal and humanistic terms. This post-conference brings together interdisciplinary perspectives to assess how new actors, technologies and global power struggles have shaped the discourses, architectures, and practices through which nation-states exercise and experience digital sovereignty.

Recent geopolitical crises necessitate a re-thinking of digital sovereignty and its implications for digital policy and international affairs. In contemporary armed conflicts, like in the case of Russia’s war against Ukraine, where battles unfold across all layers of the digital communication spectrum, control over digital data flows has become a key strategic objective. In this context, digital sovereignty can be used to justify policies that facilitate the expansion of state power beyond established territorial borders.

At the same time, how critical socio-technical systems are governed and by whom also determines experiences of digital sovereignty. UNESCO’s 2023 *Internet for Trust* report calls for the inclusion of diverse perspectives in the global governance of digital platforms. While this recommendation is admirable, it remains unclear how it can be achieved in practice. As we have seen from the last twenty years of internet research, well-meaning governance principles often lack meaningful consultation with the Global South and can be derailed by market forces. Moreover, the continued decentralisation of key internet technologies and postcolonial data practices suggest sovereigns might be reconfiguring away from statist assumptions.

Outcomes: Grant development in process for 2025/2026.

4.7 The “Great Debate”: What if there was no Copyright in Scholarly Works?

Toija Cinque and Lauren Bevilacqua were invited to take part in a debate on the implications of a world without copyright in scholarly work with Library staff and researchers from A2I2. (October 24, 2024)

4.8 Australian Social Data Observatory (ASDO)

Luke Heemsbergen and Toija Cinque were invited to represent a Deakin University node in this initiative, contribute to three development workshops in 2023/4 alongside the QUT and RMIT.



4.9 Infrastructures of Facial Recognition Technologies in Australia

Date: 9 May 2023

Event: Seminar with Ausma Bernot, SSN Visiting Scholar, Charles Sturt University

In May 2023, the Science and Society Network (SSN) and CDII research group #DataCultures stream hosted a presentation by visiting scholar, Ausma Bernot, via livestream. Ausma’s insightful talk was followed by a conversation with Christopher O’Neill. The event was organised by SSN, Toija Cinque (Data Cultures research theme and CDII) and Luke Heemsbergen (CDII and DML).

Speakers: Ausma Bernot has six years of work experience with forensic science and research organisations across the globe, in particular China, where she had the chance to gain insights on how technologies are governed at provincial and national levels. Being fluent in Mandarin and building on existing networks in China, she has excellent capabilities to access key information on both technology and governance in the country. Her current research focuses on the effects that the merging of infotech and biotech triggers in governance, surveillance, policing, and public safety. Her doctoral research explores the dynamic interaction between surveillance technologies and social context and questions around totalisation of surveillance in China.

Discussant: Dr Christopher O’Neill is an ARC Centre of Excellence for Automated Decision-Making and Society Postdoctoral Research Fellow at Monash University, working in Communications and Media Studies. His doctoral research analysed body-sensing technologies, such as heart rate monitors and productivity sensors, their historical development and their contemporary impact in the workplace, the medical clinic, and the (smart) home. His current work examines the development of biometric technologies including facial recognition cameras, and what implications such technologies might have for conceptions of identity and governance.

Details: Australia is contending with a slew of new facial recognition technologies and their uses, in the context of regulatory gaps and insufficient understanding of the historical, social, and cultural contexts in which they are used. Conversations about best practices for governing facial recognition systems at both the design and application levels are motivated by research ethics, competitive industry advantage, and public accountability to citizens, not the advantage of the people whose facial data will be fueling facial recognition.



Considering the expanding scope of facial recognition uses, these discussions put into question the meaning of best practices and how to implement them. For example, regulatory gaps allow for facial recognition technologies to be used in intrusive and covert ways. The project is built on 32 qualitative

multi-stakeholder interviews with government, corporate, and academic respondents, and the data is analysed using thematic axial coding.

The project findings suggest that the governance of facial recognition technologies requires a comprehensive framework of laws, including a reform of the ongoing Privacy Act and a national law or charter of human rights at the first instance. Furthermore, the study calls into question what best practices constitute in the national context of Australia, in particular considering the impacts on Indigenous Australians.

Outcomes: The group has consequently strengthened its external engagement through the event featuring leading academics and industry experts on surveillance addressing pressing issues like surveillance and AI ethics. The theme is being woven strongly throughout forthcoming publications and grant applications.

4.10 Controversy Mapping Book Talk and Discussion

Date: 5 October 2023

Event: CDII, together with the Data Cultures stream in SSN, hosted a book talk with authors and critical data experts, Tommaso Venturini and Anders Kristin Munk via livestream. Tommaso and Anders were in conversation with Deakin's Allan Jones (A2I2) after their talk.

Speakers: Tommaso Venturini is an associate professor at the Medialab of the University of Geneva, a researcher at the CNRS Centre for Internet & Society and a founding member of the Public Data Lab. In 2017 and 2018, he has

been a researcher at the École Normale Supérieure of Lyon and recipient of the “Advanced Research” fellowship of the French Institute for Computer Science and Automation. In 2016, he was a “digital methods lecturer” at the Department of Digital Humanities of King's College, London; and, from 2009 to 2015, he coordinated the research activities of the médialab of Sciences Po Paris. His research is positioned at the interface between social and human sciences and digital computation and design. His investigations focus on: Digital Methods, Digital Media Studies, Controversy Mapping, Science & Technology Studies, and more particularly on the attention economy (and its acceleration in online media) and Internet subcultures (and secondary orality phenomena). More at www.tommasoventurini.it

Anders Kristian Munk is associate professor at the Techno-Anthropology Lab and scientific director of MASSHINE. He does research on controversies over new science and technology, for example in relation to artificial intelligence or green transitions. He has been particularly engaged in the development of new digital methods at the interface between data science and anthropology. He is currently interested in the establishment of a methods program for computational anthropology, particularly in light of recent developments in machine learning and generative AI, and in the methodology of digital controversy mapping. He was the director of the Techno-Anthropology Lab from 2015-2023, which he helped found. He majored in Ethnology at the University of Copenhagen and holds a Ph.D. in geography from the University of Oxford. He has previously worked as an assistant professor at the Danish Technical University and as a senior visiting research fellow at the SciencesPo médialab. He is also a co-founder of the Public Data Lab.

Allan Jones is the General Manager Software Engineering for the Applied Artificial Intelligence Institute (A2I2) at Deakin University and has 15 year's experience across defense, education, employment, transport, health, aged care, and arts and culture. Allan's current research and work focus is around harnessing the emerging capabilities of Generative AI towards building ecosystems of intelligence that maximise the potential of human-machine collaboration in better serving the needs of our communities.

Details: Controversy Mapping: A Field Guide is a book about the subtle craft of exploring sociotechnical debates and describing them visually and in writing. It discusses the history of controversy analysis in Science and Technology Studies, Actor-Network Theory and Digital Methods, and it provides conceptual and practical instructions on how to investigate them with tools at the crossroad of



ethnography, semiotics, network analysis and digital fieldwork. In the seminar, the authors will discuss their experience with this method and consider its increasing relevance as a toolkit to tackle the latest evolutions of public debate in digital media.

Outcomes: The publication inspired the work of several HDR candidates, one coming to the faculty to study with Cinque for the shared approach to research design and methodologies.

4.11 Common Sovereigns: Life Amidst Digital Infrastructures

Date: 22 November 2023

Event: CDII presented a one-day symposium in Melbourne inviting participants to take a closer look at how our interactions with digital technologies are shaped by the common 'sovereigns' that construct the infrastructures of daily life.

Speakers: Maxigas of the Critical Infrastructure Lab

Details: Bringing together bright emerging voices researching the social and political implications of contemporary digital technologies, this symposium examined what matters across diverse topics such as the platformisation of music culture, new ways of understanding digital territories, hearing technologies driving health and wellbeing economies, and the feminist technoscience of humanitarian labour.

Outcomes: International Keynote and 6 ECR/HDRs from around Australia, introducing our network and growing it.

Adjacent events:

1. Maxigas Masterclass (15 November, with HDR attendance)

2. Maxigas workshop (20 November) event info through the ADM+S Melbourne Uni node
3. Maxigas data workshop (25 November)

4.12 Conference Panels and Presentations

CDII has set up or been invited to craft panels and papers on critical digital infrastructures in more conferences than leadership could attend (e.g. 4S Amsterdam). We have put our energy and time toward building HDR capacity at ADI Conference 2024, engaging with local research(ers) at AANZCA 2024, and reaching global scholars at AOIR 2024.

4.13 Launch of the Intelligent Media Lab

Established from a partnership with Meltwater in 2021, Toija Cinque founded a media analytics and data lab. By 2024, the Intelligent Media Lab (IML) had become a space for collaboration and knowledge exchange, hosting academic visitors from KEA – Copenhagen School of Design and Technology in March, and international artist Spencer Rose during Melbourne Design Week in May. The lab also provides an ongoing workshop and collaboration space for CDII



4.14 Guest Presentation with Q&A by Alan Longmuir

CDII invited Alan Longmuir from Deakin's Emerging Ed Technologies & Digital Services to give a guest presentation at the first quarterly meeting for 2024 (February).

5. Building Global Collaborations

CDII's impact extends beyond Australian borders, with a proactive approach to engaging international thought leaders. For example, the 2023-2024 hosting of renowned scholars such as **Payal Arora, Rebekah Rousi, and "Maxigas"** has catalysed reciprocal international partnerships. These efforts are set to generate further engagements planned for 2025/2026, including collaborative work with international scholars and artists such as Spencer Rose and Benjamin Knock. These initiatives underline CDII's commitment to fostering an internationally integrated research community.

Outcomes from these collaborations are in motion, with examples like a Discovery Project '26 EOI being put in by CDII, with external researchers Payal Arora (Utrecht University) and Admire Mare (University of Johannesburg) who collaborated with us in 2024.

5.1 Building Resilience against Research Output Trends

The disruption caused by the COVID-19 pandemic continues to influence academic productivity across institutions, including CDII. A comparative analysis of our members publication outputs before CDII was created and reveals a gradual decline in metrics, with journal publications decreasing from **42.5 in 2020** to **22.6 in 2022**, books from **20 in 2020** to **17.9 in 2022**, and book chapters from **10.6 in 2020** to **7.8 in 2022** (Figure 2). Because of these challenges, CDII has prioritised its efforts to reinvigorate publication momentum through seed grants and targeted workshops that strategically link emerging and established scholars to share work and create results. The quantitative outputs of this work are emerging and complex to measure – i.e., attrition, double-group-mapping, and collaboration to publication cadence. Each of which creates noise for CDII's signal.

5.2 Fostering Traditional and Non-Traditional Research Outputs

We can, however, take the time to highlight important work by our faculty members. The recent body of research produced by members of the School of Communication and Creative Arts and the School of Education demonstrates a rich and multifaceted engagement with critical contemporary issues. This diverse collection of publications and creative outputs highlights the researchers' commitment to addressing societal challenges through academic rigor, creative exploration, and public engagement.



Julio Escudero receiving best design award in the category Fibre Art at the UbiComp '24 Conference on Pervasive and Ubiquitous Computing.

A number of forthcoming research outputs, both traditional and non-traditional, have been energised directly by **CDII seed grants awarded in 2023 and 2024**.

Notably, several members developed non-traditional outputs for **Melbourne Design Week 2024**, with one project (HDR Candidate



by Oxford University Press, and several articles in *Public Relations Inquiry*, where she has explored new directions in activism and advocacy research. Particularly significant is her editorial work, which highlights the evolving dynamics of the field and the rise of ethical concerns in digital contexts.

Kristin Demetrious has made substantial contributions to the field of public relations, focusing on the transformative role of digital communications in a post-neoliberal society. Her recent works include a notable Oxford Bibliography entry on 'Public Interest Communication' published

Her research underscores the importance of understanding the interplay between communication practices and societal structures, offering a critical lens on how public relations can adapt and thrive in a digitalised world. The consistency of her focus on these themes and the recognition of her scholarship through shortlisting for the prestigious L'Etang-Pieczka award in 2024 further solidifies her position as a leading voice in this discipline.

Anne Scott Wilson has extended the reach of academic research into the realm of public-facing creative outputs and curatorial projects. Her contributions include high-profile exhibitions such as *Fugue* (2023), *Playing in the Shadows* (2023), and the landmark *EcoDigital Futures* exhibition at Melbourne Design Week (2024). These works engage audiences beyond academia, exploring the intersections of art, technology, and public discourse. Wilson's ability to collaborate with institutions such as Melbourne University, where her *Oscilloforms* project has garnered attention, exemplifies her commitment to bridging academic research and public engagement. Her innovative approach highlights the power of interdisciplinary research to foster meaningful connections between creative practice and societal



concerns, making her a pivotal figure in advancing non-traditional academic outputs.



In the School of Education, **Chris Zomer** has produced critical scholarship on the implications of datafication in education and the ethical considerations surrounding children's digital rights. His recent publications in *Computers and Education Open* delve into how data-driven technologies are

reshaping educational practices and what this means for student engagement and privacy. These scholarly works are complemented by accessible public articles in *The Conversation*, where Zomer has addressed pressing issues such as the manipulation of young learners through digital platforms. His contributions to the collaborative volume *Postdigital Videogames Literacies* further demonstrate his interdisciplinary approach, positioning his work at the intersection of education, digital ethics, and public discourse. This combination of rigorous scholarship and

public engagement ensures his research resonates across academic and non-academic audiences alike.



Richie Barker's contributions explore creativity and social dynamics within digital media, focusing on the transformative role of technology in shaping intergenerational and professional interactions. His co-authored book *Transmedia Brand Storytelling* bridges theoretical insights and practical applications in immersive media, while his articles on AI and creativity in *Convergence* and on ageism in *Advertising & Society Quarterly* explore critical dimensions of technology and communication. Barker's work on health promotion, particularly his article in *Health Promotion International* examining the historical and cultural underpinnings of public health narratives, exemplifies his versatility and commitment to addressing complex social issues through innovative methodologies.

5.3 Highlighted Publications

Key Publications from the CDII leadership offer a window into directing future work:

Cinque, T. *Emerging Digital Media Ecologies: The Concept of Medialogy*. Routledge, (In Press, 2025). **'A' ranked publisher**

Cinque, T. (2022). 'Protecting Communities during the COVID-19 Global Health Crisis: Health Data Research and the International Use of Contact Tracing Technologies', *Humanities and Social Sciences Communications Journal*, Springer Nature, 9(99)
<<https://www.nature.com/articles/s41599-022-01078-8>>
SJR Q1

Cinque, T. (2024). 'Exploring the Paradox: Perceptions of AI in Higher Education – A Study of Hype and Scandal.' *Explorations in Media Ecology*, Volume 23, Issue Artificial Intelligence and Media Ecology, Jun 2024. 199 - 215 **SJR Q1**

Cinque, T. (2024). 'Rise of the Performance and Assessment Filter (PAF): Microsoft Viva 'Bossware', Presence Status and the Power of Surveillance Machines—Sleepers Awake!' in *My Boss Is An AI: AI and The Transformation of Home-Based Work* a Special Section in the *International Journal of Communication*. 18: 3162-3181. USC Annenberg Press **SJR Q1**

Cinque, T. (2024). *Wyndham's Entrepreneurial Ecosystem: Planning for a Digital Future* 1-97, 20 Jun. Research Report for Wyndham City Council

Cinque, T. (2024). *Digital Realm* In Cinque, Jones, Heemsbergen, Minney et al 'EcoDigital Futures', *Melbourne Design Week*. Deakin Library's Public Exhibition Gallery. **(NTRO (Non-Textual))**

Heemsbergen, L., Bennett C., & Mann M. 2025. There's (not) an App for that: situating smartphones, Excel, and the techno-political interfaces and infrastructures of digital solutions for COVID-19. *Humanities and Social Science Communications*. Nature. **SJR Q1**

Heemsbergen, L. *Radical Transparency and Digital Democracy*. 2022/2025 Emerald, reprint in paperback. London.

Heemsbergen, L., Krebs, S., Gorur, R., & Maddox, A. 2024. Algorithmic Performance Management in Higher Education: Viva! 365 Ways of Surveillance. *Surveillance & Society*, 22(2), 73-87. **SJR Q1**

Yang, F., Fordyce, R., & Heemsbergen, L. 2024. Towards a Translational News Ecology: Covering the 2022 Australian Federal Election on WeChat. *International Journal of Communication*. **SJR Q1**

5.4 Highlighting HDR Contributions

CDII's philosophy extends beyond metrics, embracing the enriching contributions of Higher Degree by Research (HDR) students. Initiatives like the **HDR Masterclasses** around Payal Arora's work have fostered collaboration among Deakin HDRs and scholars across Australia, leading to critical dialogues and potential special issue publications. Similar successes have emerged from engagements with Rebekah Rousi, where HDR participation has been instrumental in driving meaningful research outcomes.



6. Public Engagement and High-Impact Initiatives

In addition to research outputs, CDII has made significant strides in public engagement. Highlights include:

6.1 EcoDigital Futures Exhibition (Melbourne Design Week 2024)

CDII led the curation of this national exhibition (NGV with the support of Creative Victoria), bringing together artists and researchers to explore ecological and digital intersections. Collaboration extended beyond our institution with high-profile engagements, including generative artists, Spencer Rose; multidimensional artist Benjamin Knock, songwriter Darren Middleton from the legendary Australian rock band Powderfinger working alongside indigenous vocalist Yirmal Marika, who continues the legacy of his grandfather, the former lead singer of Yothu Yindi.

6.2 Authoritarian Information Manipulation and Dissemination

CDII and ADI led a Hybrid Workshop Event: Authoritarian Information Manipulation and Dissemination: National, Transnational, and International Perspectives (7-8 November, Burwood, Melbourne)

6.3 Festival of Ideas

CDII worked with REDI and SSN at Deakin to collaborate with RMIT and Utrecht University to situate a four-day festival of ideas around “Society 5.0: Ethics”, Technology from and for the Global South, and emerging infrastructures. Normatively, we hoped to bring to light *Ingressive* Issues in Science and Society, and how *Congressive* Infrastructures might address them. Here we were able to not only tell CDII’s story across institutions, but engage our and others’ HDR candidates to world-class thinking.

6.4 Public Addresses

- Luke Heemsbergen was an invited speaker (with Fan Yan) at the Electoral Regulation Forum, sponsored by the Electoral Regulation Research Network, covering alternative social media infrastructures’ impact on elections (3 Dec 2024). This work led to engagement opportunities with the AEC, and organisations including the Susan McKinnon Foundation.
- Toija Cinque was recently invited to deliver a Keynote presentation for the University of Vaasa in Finland. Spooky AI—privacy concerns and algorithms that go ‘bump in the night’ was a joint seminar between the BUGGED and SYNTHETICA projects taking privacy discussions beyond the creepy to engage in issues causing stress, anxiety, and hyper vigilance in everyday technological experience <<https://sites.uwasa.fi/bugged/event/spooky-ai-privacy-concerns-and-algorithms-that-go-bump-in-the-night/>> (5 November 2024) .
- Luke Heemsbergen gave public talks at University of Texas (Austin) and University of Houston on how XR infrastructures and novel interfaces re-socialise everyday life (April 2024).
- Luke Heemsbergen Delivered public address at the Australian Centre for the Moving Image: Digital Child x ACMI Seminar: How is AI Changing Digital Childhoods? (1 November 2023)
- Toija Cinque, Luke Heemsbergen, and affiliated HDR student presented a paper "Critically Positioning Digital Infrastructures and Interfaces: A Case Study of Participatory GIS for Coastal Climate Conservation" for 4S (Hawaii) (November 2023)
- Toija Cinque and Monique Mann gave an invited talk on Immersive Learning in 360° at Nyaal Imaginarium and showcased their research at the ArtsEd Learning Innovation Futures Forum 3 (18 May 2023).
- Luke Heemsbergen Spoke at ADI Event on Generative AI 25 May “MDM Seminar - Exploring the Potential of ChatGPT in Research: Benefits and Risks” (25 May 2023)
- Toija Cinque was interviewed for Tales4Teaching podcast on Teaching threshold Concepts for Media Ecologies [Ep 72 - Teaching threshold concepts through Immersive Learning] (June 2023)

6.5 International Collaborations

Relationships built with scholars like Rebekah Rousi facilitated an international residency for CDII member Anne Wilson at the University of Vaasa, exemplifying the global impact of the group’s initiatives.

7. Highlighting Current and Evolving Projects (2024–2026)

7.1 WeChat, The Voice, and Australia's Next Election

360-degree video still

Chinese speaking Australians consume news on WeChat. How this space is governed and who influences political communication there is being considered from the perspective of Chinese Australians, and in line with concerns of the AEC and partnered with the Susan McKinnon Foundation. This work is enabled by CDII support and is based off preprint studies and a CDII-subteam's published work on WeChat in the *International Journal of Communication* (2024 Q1) and *Media International Australia* (2022 Q1).

7.2 Digital Sovereignties

Drawing from a successful workshop (2023) and international conference hosted with University of Sydney (2024) we are pursuing critical work on how digital sovereignty is envisioned, eroded, and can be empowered in the age of big tech. To this end a DP26 EOI was submitted with Partner Investigators in Utrecht and Johannesburg.

7.3 Viva Bosware! 365 and more Ways of Surveillance

Office software has platformed knowledge work, and nudges knowledge workers towards metrics of wellbeing, professional growth, and explicit monitoring. This project interrogates the norms that 3rd party platforms are pushing into the creation of public goods. This work has ethics to investigate Office AI and monitoring platforms at Deakin in 2025.

Heemsbergen L, Krebs S, Gorur R, Maddox A (2024) Algorithmic Performance Management in Higher Education: Viva! 365 Ways of Surveillance. *Surveillance & Society*

Cinque T (2024) Rise of the Performance and Assessment Filter: Microsoft Viva "Bosware," Presence Status, and the Power of Surveillance Machines—Sleepers Awake! *International Journal of Communication*

7.4 Defining Communication in an Surveillant Era

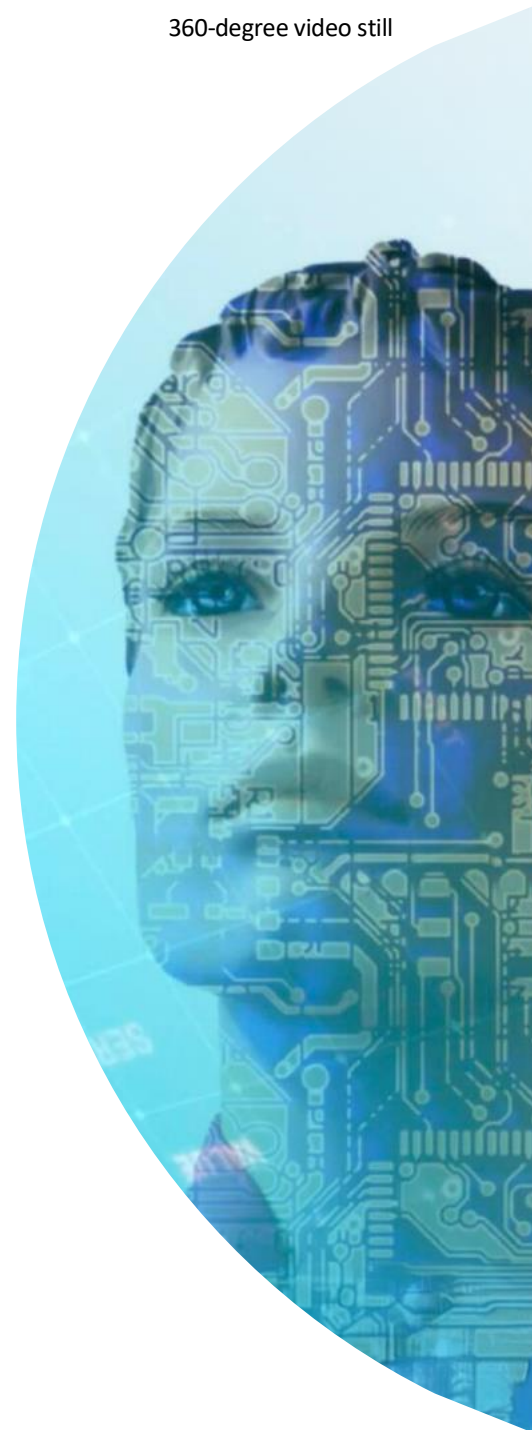
This project explores how communication is defined legally and by Australians' own pub-test - to show implications for reforms required for the laws of information privacy, telecommunications surveillance, and digital markets, and is funded by ACCAN until 2025.

7.5 Melbourne Design Week Curation

Our Eco Digital Futures Exhibition curated works from nationally and internationally renowned artists into Melbourne Design Week as a way to translate research on our possible futures into provocative public artwork that explored how digital infrastructures impact the natural ecologies we are part of.

7.6 Testing Immersive experiences for tertiary learning

Technology is a powerful and affective platform to tutor students. Drawing on two 10-minute 360° films demonstrating unit-specific threshold concepts, researchers implemented these innovations to immerse students in experiences that enhance understanding. Our own infrastructures at the Nyaal Facility, on Waurin Ponds Campus, enabled this project.



8. Outreach, Mentoring, and Futuring Growth

8.1 Enabling our Environment to Grow Research(ers)

To close out 2024 in November, CDII utilised Waurn Ponds to efficiently build research capacity for CDII and build our researcher's capacity and ownership of CDII via a series of intensive workshops that:

- introduced a multidisciplinary team from the Institute of Health Transformation (led by Professor Katherine Backholer) and the Centre for Law as Protection (Led by Professor Shiri Krebs) to ideate and organise towards a series of 2025 projects around the infrastructure and interfaces of harmful online advertising. These projects will target large NHMRC and Cat 2-4 grants with Faculty Appropriate FOR codes after early collaborative work is published in 2025.
- Grew HDR capacity through 2 days of workshopping CDII HDR members' national conference papers (in ADI Conference 2024 and UbiCom 2024), how these can be leveraged into productive TRO pathways, and practical research strategies for HDR/ECR around FORs and tools to empower their agency in academia - ranging from Deakin's WSIP to OpenAI's latest LLM interface that can search for specific publishing opportunities..
- Opened CDII 2025 priorities for discussion that reflected our history and member interest in what should come next. This set the stage for key themes in 2025 (see section 9).



CDII events across Australia (2023-2024)

8.2 HDR Highlights

The following statements highlights several key aspects of the Critical Digital Infrastructures and Interfaces (CDII) research group that underscore its success and impact as a collaborative and supportive academic network. The testimony encapsulates how CDII fosters innovation, facilitates multidisciplinary engagement, and supports both traditional and non-traditional research outputs (NTROs), directly contributing to the career development and academic achievements of its members.

Quotes from two of our HDR members:

“Being part of the CDII research group has been an incredibly rewarding experience. It provided me with access to a wide range of discussions, enriching my knowledge across multiple fields, thanks to the multidisciplinary nature of its members. This exposure to diverse ideas and expertise directly contributed to the creation of both an artwork and a published conference proceeding for UbiComp '24. CDII played a pivotal role by providing campus data, the necessary funding, and mentorship to enable the realization of a Non-Traditional Research Output (NTRO). The NTRO went on to be awarded Best Design in the Fiber Art category at the UbiComp '24 conference, which was a great honour.”

“Being part of CDII has given me multiple opportunities to engage with other like-minded researchers. Even though we work on different projects it is great that we work on similar themes to encourage thinking and debate. It is a though the group is evolving together and becoming more enmeshed.”

From another HDR Attendee of our research workshop:

I’m writing to say a big thank you for the CDII Workshop last Thursday and Friday. I had such a productive time working with you both and PhD friends. Preparing and practicing presentations for the ADI Conference together was a great experience, and the constructive feedback I received helped me identify how I can improve further.

The session on PhD roadmapping and the introduction to FOR codes was very helpful for me as a PhD student who just started my candidature a few months ago. It gave me a clearer understanding of how important it is to identify my research field early on and think strategically about how to make the most of my PhD journey, especially in preparing for a future career in academia.

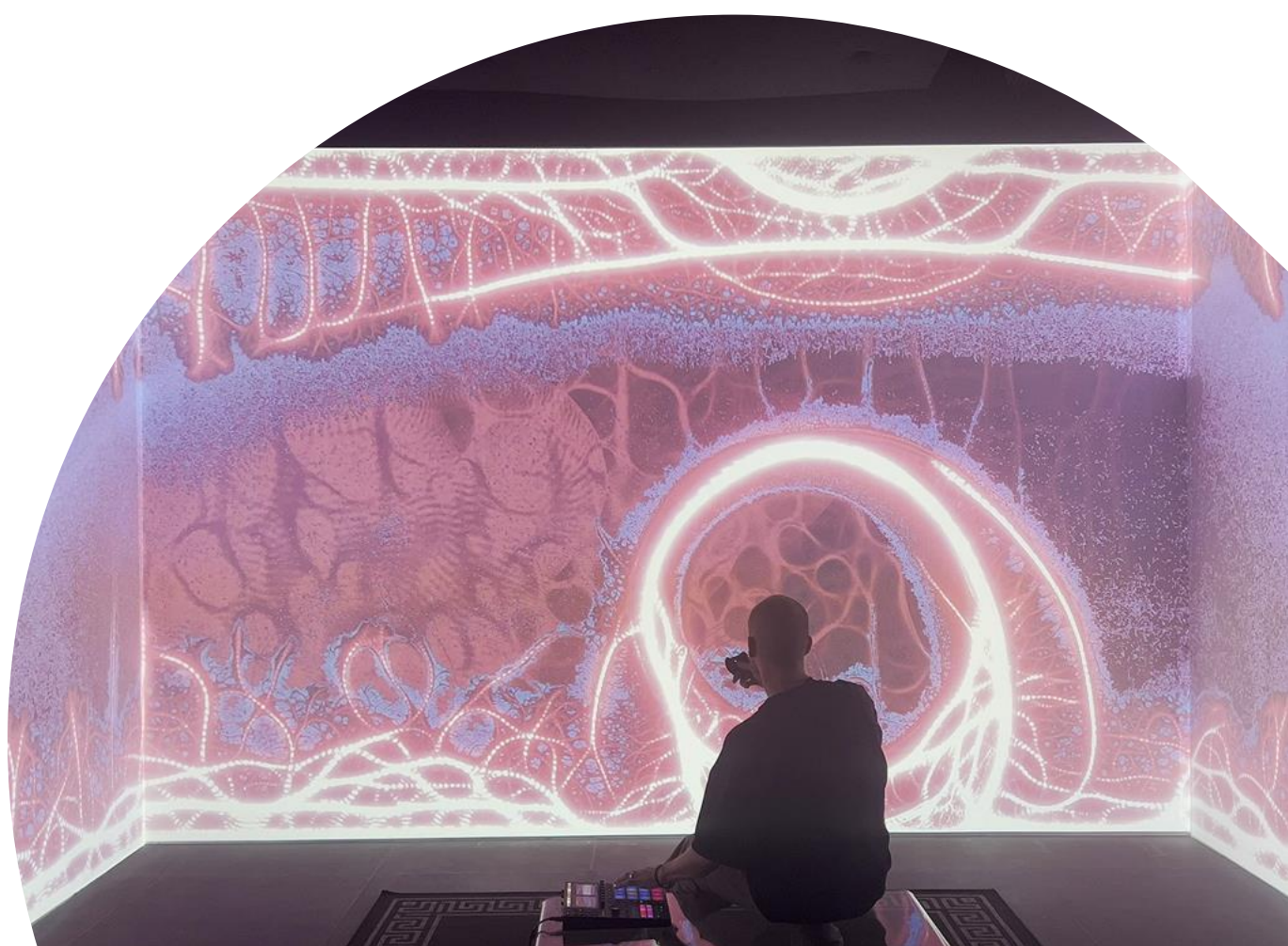
Once again, thank you for all the effort that went into organising the workshop!

8.3 HDR Completions

Toija Cinque had one HDR completion in 2024 and has two HDR Candidates under examination in 2024.

Toija’s candidate under examination, Zahidah Zeytoun Mille’s had their PhD creative work selected for inclusion in the Australian Muslim Artists 2024 Art Prize and Exhibition at the Islamic Museum of Australia until March 2025.

Heemsbergen’s current five candidates are midstream, 0.6-2.2 years since commencement, with 3 previous completions



9. About the Co-Leads



Toija Cinque

Toija Cinque is Associate Professor in Communication (Digital Media). Cinque draws on a broad scope of theoretical and methodological approaches, with projects focused on using emerging screens and digital technologies for educational effect and change. Her research focuses on problems and affordances of digital life, particularly on media developments of digitisation, datafication and platformisation (i.e., data-driven and algorithmically steered platforms), and their cultural, social, and political implications.

Luke Heemsbergen

Dr. Luke Heemsbergen is a Senior Lecturer at Deakin University specializing in how emerging technologies impact society and how society can impact emerging technologies. Alongside co-leading CDII, he is an AI at the ARC Centre of Excellence for the Digital Child.. His work is distributed by diverse publishers - from Nature to The New York Times and engages local organisation to do global research. His work draws on experience serving in Canada's department of Foreign Affairs and expresses a normative desire to move quickly and mend things.





Critical Digital Infrastructures and Interfaces