

Confusion Matrix

2024

According to the coastline paradox, the more accurately you measure something, the larger it gets. Computers can't generate their own random numbers, for this they need something outside of themselves. No matter how much data we have, it only ever makes sense to predict the weather two weeks in advance. The human brain and weather prediction algorithms both use random noise to model the unpredictability of turbulent and complex systems — the world is noisy, some call this chaos! Maybe it's called living life, living with infinite resolution and possibility.

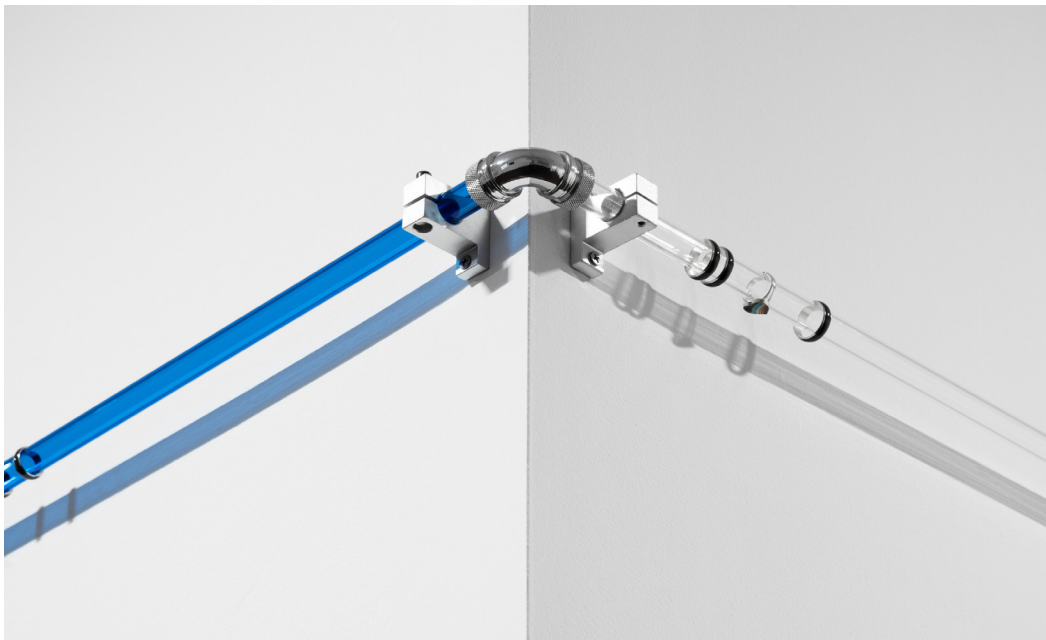
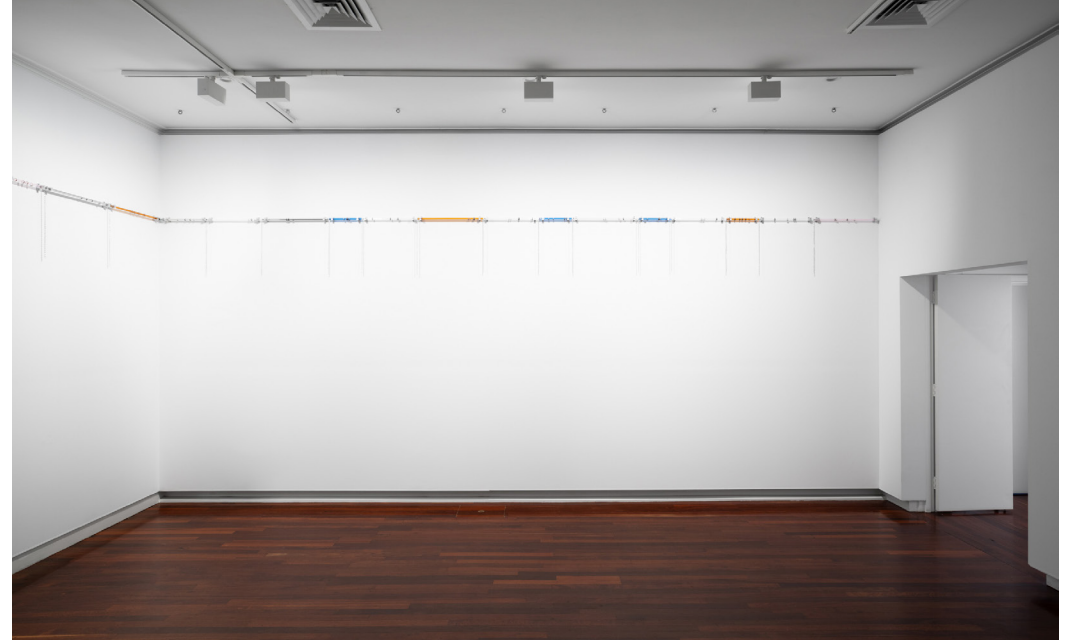
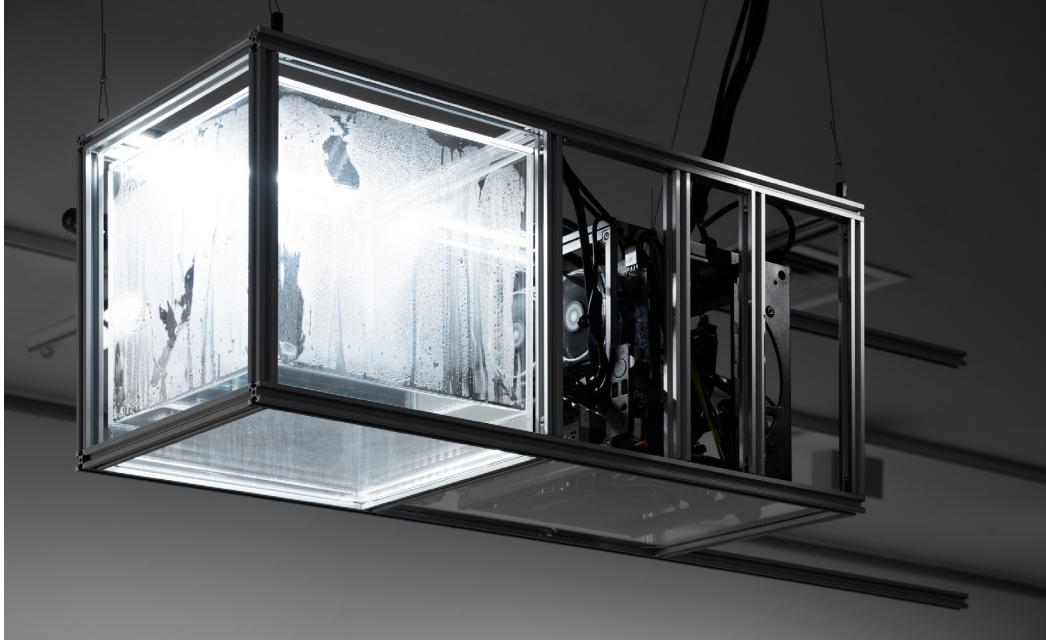
Confusion Matrix is an exhibition composed of a weather-controlled computer simulation looking impossibly close at virtual objects, and an assemblage of components from windchimes, precision automated manufacturing, mood rings, antennas, and the cooling systems of personal gaming computers. It is about the ways in which we process the world through representations and measurements, and the limits of where these technologies break down.

[View catalogue](#)



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Mullaloo and Magnus

2022 – 2024

Mullaloo and Magnus is an exhibition about an interconnected system composed of an aquifer — Mullaloo — and a supercomputer Magnus.

For millions of years, the Mullaloo aquifer was sealed, plantless and occupied only by stygofauna and troglofauna that live only off the remains of each other (we don't really know how they can survive like this). The animals and bacteria that make up the ecosystem of the aquifer have hardly been seen. We are only just beginning to be able to sense them through Environmental DNA (eDNA) sampling technology, a technique which has only recently been made available by supercomputing. Magnus, the fastest supercomputer in the southern hemisphere, sits above the

Mullaloo aquifer. As Dr Mathew Campbell and Dr Mattia Saccò process the eDNA in the water of the Mullaloo using Magnus, the waters of the aquifer flow through Magnus itself, cooling its processors, to be expelled back into the aquifer. A system at once symbiotic and compromised.

Mullaloo and Magnus presents a sculpture, generative sound work and a realtime eDNA simulation made through collaboration with Dr Mattia Saccò and Dr Matthew Campbell.

With support from the Subterranean and Groundwater Ecology (SuRGE) Group at Curtin University, Pawsey Supercomputing Center Visualisation Lab and CSIRO.



Mullaloo and Magnus

2022 – 2024



Random Cube

2023

Random Cube converts a replica of the *Condensation Cube* by Hans Haacke into a hardware random number generator, generating true random numbers from the complex variations of condensation on the surface of the plexiglass cube. The computer has then been manipulated to move the mouse, click, press keys, and scroll based on the output random numbers. This is similar to a mouse jiggler, which helps deceive your work's monitoring software when you're Away From Keyboard (AFK). However, unlike a mouse jiggler, the actions it produces are truly

random, in a cosmic sense. The many influencing factors on the condensation patterns make them extremely complex and unpredictable with current technology. This chaos is unleashed on my personal computer — we just watch what it does, honed in by the platforms which control Web 2.0 and the black box of my PC. Live screen recording viewable here: <https://vimeo.com/818805832>



Surface

2016 – 2018

A realtime simulation that uses current weather data to alter its simulation and representation. The weather data controls all aspects of the simulation (the animation of the water roughness, camera changes, zoom, depth of field, and effects and audio) creating a dynamic changing ambient film. The location represents itself through this data link. In effect, the software

allows the minute by minute weather changes of the surface above the Marianas Trench to be transformed into a film that changes and flows like the weather itself.

Install video: <https://vimeo.com/413594424>









A Meteor
2013

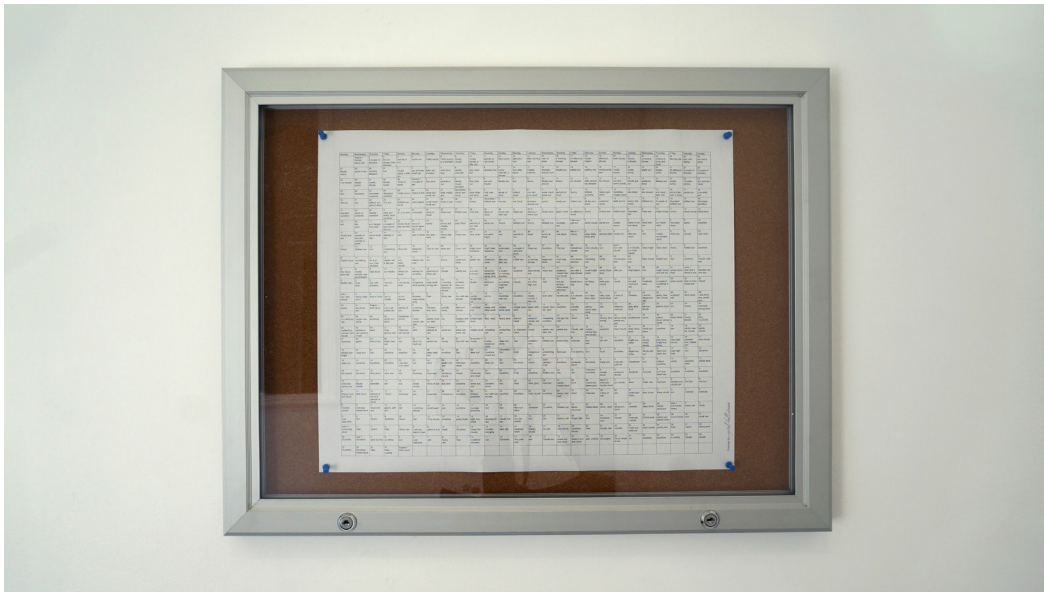




Those who compute
of the weather can
breathe of it freely
2018 – 2020



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2018 – 2020

The Tardi-Grade System's analysis screen illuminated Q's face. They'd been following the particles for days, cataloguing the entire history of the sand. The process was time consuming, but accurate. Each particle's topology could be read by the system, despite it's palimpsest surface. The surface world was decoded by each mark being cross referenced with the database which had been built from over one million hours of computer and human integrated image recognition. Tardi-Grade knew the exact scar an impact from a football made on a grain of sand.

This wasn't enough, next came chemical analysis. This worked in a way similar to a dogs nose . All of the 1 particles left on the sand from its contact with other things formed a chemical trace from which its ancient construction was decoded. This was then cross referenced with all of the major databases: DNA, CSIRO, The Dept of Mining and Minerals, social media, The Market, Documentary Corp, HELL, The Jail of Fiction, The History Channel, Starbucks, and the UN. The information spanned over 4.3 billion years, causing each grain to have huge and complex histories.

These two time-consuming processes resulted in masses of raw data, Zettabytes worth for each grain. At the beginning of the 21st Century when mass surveillance and information mining rose to prominence, miners realised the ease by which they could gather masses of information, and the difficulty in sorting through it. That's where the T-system came in; it curated most of the information into different nets, but it was Q's job to pan through the history, selecting the most important narratives to be visioned.

The aim was to find nets of information which would be the most valuable. When a "prime net" was found, it unlocked radical connections between systems and objects invisible to human understanding. "Everyone now knew the connection between cranberries, the International Space Station, Henry Kissinger, Xiamen, and dust mites." Q loved finding these odd networks, but the real value -the pay check- came from using these networks and some of the T-systems algorithms to predict the future . 2

Tardigrade to this date had predicted over 684,639 future events with 78% accuracy, including the election of Spence Dura-Iris, the first human/slime-Mould entity to be elected as head of the Tax Affairs Council, (the current world governing body).

Soon there would be no uncertainty.

1 <https://www.youtube.com/watch?v=e5Qd9gbWp60>

2 "After so much hard reasoning, may on I play with a fantasy?"

Imagine a large hall like a theatre, except that the circles and galleries go right round through the space usually occupied by the stage. The walls of this chamber are painted to form a map of the globe. The ceiling represents the north polar regions, England is in the gallery, the tropics in the upper circle, Australia on the dress circle and the Antarctic in the pit.

A myriad computers are at work upon the weather of the part of the map where each sits, but each computer attends only to one equation or part of an equation. The work of each region is coordinated by an official of higher rank. Numerous little 'night signs' display the instantaneous values so that neighbouring computers can read them. Each number is thus displayed in three adjacent zones so as to maintain communication to the North and South on the map.

From the floor of the pit a tall pillar rises to half the height of the hall. It carries a large pulpit on its top. In this sits the man in charge of the whole theatre; he is surrounded by several assistants and messengers. One of his duties is to maintain a uniform speed of progress in all parts of the globe. In this respect he is like the conductor of an orchestra in which the instruments are slide-rules and calculating machines. But instead of waving a baton he turns a beam of rosy light upon any region that is running ahead of the rest, and a beam of blue light upon those who are behindhand.

Four senior clerks in the central pulpit are collecting the future weather as fast as it is being computed, and despatching it by pneumatic carrier to a quiet room. There it will be coded and telephoned to the radio transmitting station. Messengers carry piles of used computing forms down to a storehouse in the cellar.

In a neighbouring building there is a research department, where they invent improvements. But there is much experimenting on a small scale before any change is made in the complex routine of the computing theatre. In a basement an enthusiast is observing eddies in the liquid lining of a huge spinning bowl, but so far the arithmetic proves the better way. In another building are all the usual financial, correspondence and administrative offices. Outside are playing fields, houses, mountains and lakes, for it was thought that those who compute the weather should breathe of it freely."

Lewis Fry Richardson, Weather Prediction by Numerical Process, Cambridge: Cambridge University Press, 1922.

Oliver Hull

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Oliver Hull is based in Naarm/Melbourne on unceded Wurundjeri land, and was raised in Wooditchup/Margaret River on unceded Noongar land. His work often examines the poetic and political interplay between images, measurement and natural environments, taking the form of digital media, sculpture and installation. He has participated in numerous solo and group exhibitions nationally and internationally in institutional, artist run, online and offsite settings.

Selected Solo Exhibitions

- 2024 *Confusion Matrix*, Goolugatup Heathcote, Perth.
- 2023 *Green River*, scatalogicalritesofallnations, London.
- 2023 *Random Cube*, Disneyland Paris, Perth.
- 2023 *Mullaloo and Magnus*, Kings Artist Run, Melbourne.
- 2020 *The Gift (meanwhile those who compute the weather should breath of it freely)*, Cool Change Contemporary, Perth.
- 2018 *endless-oceaning-image*, Bus Projects, Melbourne.
- 2017 *How is the Crater, the Image*, Firstdraft, Sydney.
- 2016 *AAC*, Seventh Gallery, Melbourne.
- 2015 *298000 BC & 2005 AD & 2013 AD & Forever*, National Science Week Screening, Perth Arts Precinct in collaboration with Moana Project Space, Perth.
- 2015 *An Abyss II*, Archive, Sydney.
- 2014 *What's the Time in Gotham City (? to ?)*, Platform Contemporary Art Spaces, Melbourne.
- 2013 *A METEOR*, Institute of Jamaisvu, London UK.

Selected Collaborative Exhibitions

- 2023 *The Rock Pool*, with Kieron Broadhurst, Jess Day, Pascale Giorgi, Jessee Lee Johns, Oliver Hull, and Jack Wansborough. Artsource Fremantle.
- 2020 *Oranging Rain Glow* with Jack Wansbrough, Private Island Gallery, Perth.
- 2018 *Orbiting Rainbows* with Jack Wansbrough, Kings Artist Run, Melbourne.
- 2016 *An Event*, Success, Fremantle with Giles Bunch and Kieron Broadhurst.
- 2015 *Endless Autumn* with David Attwood, Bunbury Regional Art Gallery, Bunbury.

Selected Group Exhibitions

- 2024 *As Above, So Below*, ISEA 2024, QUT Art Museum curated by Katherine Dyonisus
- 2022 world wide wind chime festival, curated by Ellie Hunter & Laurel Schwulst. www.windchime.world- Princeton University.
- 2022 *Hundreds & Thousands*, Fremantle Arts Center, Fremantle Arts Centre.
- 2020 *Moveable Types*, Kunst Insitiut Melly, Contemporary Art, Rotterdam, Netherlands.
- 2020 *Postcurse*, freehold projects, Leeds. Curated by Joshua Hart.
- 2019 *Other Suns*, co-curated by Erin Coates and Jack Sargeant, Fremantle Arts Centre and Revelation International Film Festival, Fremantle.

Oliver Hull

- 2018 *Shakespeare Grove Artist Studios 20th Anniversary Exhibition*, Carlisle Street Arts Space, St Kilda, Melbourne.
- 2017 *Light as a feather...*, Moana at Hobiennale, Domain House, Hobart.
- 2016 *7.45 Books*, Pierre Kamp Lab, Jan van Eyck Academie, Maastricht, Netherlands.
- 2015 *Specific Gravity*, Moana Project Space, Perth.
- 2015 *Bunbury Biennale*, Bunbury Regional Art Gallery, Bunbury.
- 2015 *Conditional Expressions, Set The Controls For The Heart Of The Sun*, Leeds, UK.
- 2013 *CONTEMPORARY FIGURATION, UDSILLINGSSTEDET Q*, Copenhagen, Denmark.
- 2010 *South West Survey*, Bunbury Regional Art Gallery, Bunbury.

Selected Press and Publications

- Generative Items*, Fake Whale 2024 publication.
- Interview with Fake Whale 2024: <https://log.fakewhale.xyz/fakewhale-in-dialogue-with-oliver-hull/>
- Confusion Matrix*, published on Saliva 2024.
- Random Cube*, Francis Russell, Dispatch Review 2023.
- Yeah, Nah, Rockpool!*, Aimee Dodds, Dispatch Review, 2023.
- WA: WITHOUT MEMORY OR DESIRE*, Francis Russell, in Permanent Recession: a Handbook on Art, Labour and Circumstance, Edited by Channon Goodwin Onomatopoe ,2019.
- Journey through time and space with Other Suns*, Graham Mathwin, Artguide Australia, 20 August 2019.
- A galaxy of ideas in sci-fi show*, Miranda Johnson, Seesaw Magazine, 6 August 2019.
- A break in the weather*, Seesaw Magazine, July 26 2018.
- Possible futures: Science fiction in contemporary art*, Andrew Frost, Artlink, Issue 36:4 Parallel Universe, December 2016.
- An Event* review by Graham Mathwin, Sensible Perth, December 2016.
- A Eulogy for Archive_*, Luke Letourneau, Rebecca Gallo, Runway 30# Ecologies.
- Going boldly beyond words, ideas*, Gemma Weston, The West Australian, 19 July 2013.
- South-West Shows its Best*, Ric Spencer, The West Australian, 1 April 2010.
- Over There: Survey 2010 Art in the South West*, Dr David Bromfield, catalog essay January 2010.

Education

- 2022 Animation, Games and Interactivity RMIT, Melbourne. Deans List.
- 2012 Bachelor of Art (Fine Art) (First Class Honours), Curtin University, Perth.
- 2011 Bachelor of Art (Fine Art), Curtin University, Perth.
- 2010 Student exchange, Middlesex University, London, UK.