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Entertainment

'Enchantress of numbers' opens atmospheric exhibition

Marion Rae AAP

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📷 Art, science, light and sound combine with artificial intelligence in Atmospheric Memory. (Marion Rae/AAP PHOTOS) Credit: AAP

- "Very interesting", says a fragment of writing from the first programmer Ada Lovelace to computer pioneer Charles Babbage.
- A glimpse of her lengthy correspondence with the philosopher-inventor is on display alongside a mechanical "difference engine" at the entry point to an international exhibition making its Australian debut.
- Art, science, light and sound combine with artificial intelligence in multi-sensory chambers created by Rafael Lozano-Hemmer and on tour at the Powerhouse Ultimo in Sydney.

Beginning in intimate booths where individuals can talk to a philosophical chatbot, the Atmospheric Memory exhibition rapidly explodes with light, sound and ideas through a series of larger and larger rooms.

The interactive, sensory-rich installations have been staged with treasures from the museum's vast vaults to link the past with the present.

"Just to see that card with the two words ... It's special to see all of computing there in the collection, from the very beginning," Toby Walsh, a global authority on artificial intelligence, told AAP.

"To realise what someone like Ada imagined back then, an idea that's centuries ahead of its time."

Various other people were trying to build mechanical computers to remove errors in tidal, astronomical and artillery tables by mechanising the calculations.

"But Ada came along and realised that those numbers or tables did not have to be the elevation of the moon but might actually be musical notes, or words in a poem, or dots in a picture," Professor Walsh said.

Nicknamed the "enchantress of numbers" by Mr Babbage, Ms Lovelace wrote a paper in 1843 about the "analytical engine" that explained its potential beyond crunching numbers to more artistic endeavours.

Meanwhile Mr Babbage - centuries ahead of cloud computing or anyone saying "just Google it, mate" - proposed that every word spoken leaves its mark in the atmosphere and can never be erased.

He believed an advanced computer could trace the molecules and bring back moments with loved ones or solve crimes.

"Babbage wanted to rewind the motion of all molecules of air," Lozano-Hemmer said.

"Atmospheric Memory, possibly the most ambitious project I have ever undertaken, explores his idea today.

"The dream of perfect recollection is one of the defining conditions of our digital life, and the air that we breathe has become a battleground for the future of our planet."

Tracking and recording people, words and images is now commonplace via GPS, facial recognition, smartphones and other devices, which are supported by vast troves of data stored on centralised servers in the "cloud".

An actual cloud of water vapour pumps into one of the chambers, while in another zone there are projected words melting as the climate changes.

In another chamber, ceiling lights and sound cascade like a vertical waterfall triggered by the movement of museum-goers across a vast, otherwise darkened room.

On a wall there is Last Breath, a mechanical respirator circulating a breath of composer Pauline Oliveros in a brown paper bag that inflates and deflates 10,000 times a day.

The American composer was a pioneer of experimental and electronic music in the 20th century and died in 2016, but her breath continues circulating in this biometric portrait.

Small groups are let in every 10 minutes to allow maximum impact and participation, but can take their time in each of the interactive rooms.

Other AI-driven exhibits respond to a spoken word with flashes of sparks, moving parts and projected patterns.

Prof Walsh, chief scientist at the University of NSW Artificial Intelligence Institute and author of a new book about Ada, was commissioned by the Powerhouse to uncover the legacy of the world's first computer programmer.

The Universal Machine essay has been published in the first of an online series called Writing Objects that is intended to open up the freshly digitised collection to new audiences.

"I was absolutely thrilled to do this piece for the Powerhouse because you could touch the very beginnings of this field," he said.

"We've never had technology that can get into the hands of so many people so quickly."

He expects artificial intelligence will be as impactful on our lives as the internet or electricity but what will surprise is the speed and spread, with ChatGPT already available to over a billion people.

But it is a "double-edged sword", and artists should be properly paid for work that this is feeding these new tools, he warned.

"The irony is not lost on me, an AI researcher whose book about AI has been ingested by these AI programs without my consent," he said.

"That is not sustainable. That is not an appropriate way to reward the labours of people who put their time and effort into making those works."

A trove of more than 500,000 objects has been created by the Powerhouse's digitisation project in one of the world's largest such exercises.

The museum's CEO Lisa Havilah said the objects in the Powerhouse collection continue to intersect with how people are imagining and inventing their futures.

"The Powerhouse holds Australia's most significant collection of science, technological and design objects, including one of the only existing models of Charles Babbage's Difference Engine No1, completed by his son after his passing," she said.

"This series of writing commissions bring these extraordinary connections to life."

The exhibition runs until November 5 and objects can also be viewed online.

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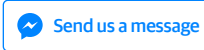
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