

Matthew Gardiner

Lives and works in Geelong, Australia, and Linz, Austria

1997 Bachelor of Fine Art Photography, Victorian College of the Arts

2019 Doctor of Philosophy in Fine Art, PhD by Research, University of Newcastle

URLs <https://matthewgardiner.net> <https://orilab.art> <https://matthewgardiner.com>

Bio

Dr Matthew Gardiner is an artist most well known for his work with origami and robotics. He coined the term Oribot 折りボト and then created Oribotics, a field of art/science research that thrives on the aesthetic, biomechanic, and morphological connections between nature, origami and robotics. Gardiner holds a position as artist and key researcher at the Ars Electronica Futurelab, in Linz Austria, where the philosophy of art, society and technology intersect.

As an artist Gardiner works with origami and robotics: Oribotics. The work arises from the consideration of folded forms, their kinetic properties and electromechanical methods of actuation, sensing, interactions and luminous display. In 2003 Gardiner coined the terms Oribot and Oribotics, to define the emergent field of folding, robotics and technology, and has produced the following works with premieres: Oribotics 2004 at Next Wave Festival, Oribotics [laboratory] 2005 at Asialink Center, Oribotics [network] 2007 at the Melbourne International Arts Festival, Oribotics [de] 2008 at Künstlerdorf Schöppingen, Oribotics [house of dreaming] 2009 for Arena Theatre Company, Oribotics [the future unfolds] 2010 for Ars Electronica Festival and Tokyo Design Touch, 2020 Oribotics [clima] at Centro de Ciencias de Sinaloa (Science Center of Sinaloa).

Skillset summary

Gardiner is an diverse skilled artist with expertise in digital and traditional techniques. An autodidact with high level artistic conceptual skills, including “product” (generally robotic artworks and museum pieces) as an independant artists or team. Capabilities across design domains of: experience, electronics (PCB and system design), software and programming (c, c++, python, php, js, bash, web admin, apache/mysql/sockets), 3D CAD (solidworks, rhino, grasshopper, blender, including python scripting). Capable of establishing and leading a team within art science research-based framework with a focus on digital fabrication, generative geometry, and material experimentation. Also, a ninja-level origami artist and designer. Recent works focus on the role of art and design in engineering and scientific kits designed to build competence and curiosity in oribotics.

Work History

2014 - present *Key Researcher and Artist*, Ars Electronica Futurelab <http://www.aec.at>

2011 - 2014 *Senior Research Lead and Artist*, Ars Electronica Futurelab <http://www.aec.at>

2000 – 2011 *Airstrip Director*, New Media consulting, <http://www.airstrip.com.au>

1999 – 2007 *Multimedia Lecturer*, Swinburne University, National Institute of Design

1997 –1999 *Drome Pty Ltd*, Directors Peter Hennessey and Patricia Piccinini

Selected Exhibitions and Projects

2022 • *Hello Machine Hello Human, AI chatbot for Rachel Hanlon*, Science Gallery Melbourne

2021 • *Origami & Robotics: programming and self-aware origami*, Ars Electronica Centre, Linz

• *oribokit®*, Ars Electronica Futurelab 25th Anniversary, Ars Electronica Centre, Linz

• *oribotics [the future unfolds]*, Centro de Ciencias de Sinaloa, Mexico

2020 • *oribokit® art science robotic origami kit* <https://oribokit.com>

• *Neben der Nibelungenbrücke (Beside the Nibelungen Bridge)*, Ars Electronica 2020

2019 • *Oribotics [the future unfolds]*, Science Center Singapore

• *Hello Machine Hello Human, AI chatbot production for Rachel Hanlon*, Science Gallery Venice

2018 • **ORI** * PhD Thesis, Newcastle University

• *Oribotics [the future unfolds]*, Garten der Künstler, Tulln, Austria

• *The Folded Geometry of the Universe*, Intersezioni Digitali, Italy

2017 • *The Folded Geometry of the Universe*, Experimenta Make Sense, RMIT, Melbourne

- Ongoing project: ORI* on the Aesthetics of Folding and Technology PEEK FWF
- NIWASHI 2, large format 3D printing process
- 2016** • ORI*LAB, Ars Electronica Festival, Linz Austria
- NIWASHI 2, large format 3D printing process, Ars Electronica Festival, Linz Austria
- ORI*fox, Ars Electronica Festival, Linz Austria
- *The Folded Geometry of the Universe*, Ars Electronica Festival, Linz Austria
- ORI* coding for matter, Kyoto Design Institute, Kyoto, Japan
- 2015** • *Oribotics [the future unfolds]*, Osaka, Japan
- 2014** • PhD candidature commenced
- *Oribotics [the future unfolds]*, Surface to Structure, Cooper Union, New York City
- *Oribotics [the future unfolds]*, Solidcon Keynote, San Francisco
- 2013** • *Light is Time, Folds Are Space*, Alhòndiga Bilbao, Spain
- *Project Genesis*, (curator) Ars Electronica Centre, Linz, Austria
- *Synthetic Memetic*, *Project Genesis*, Ars Electronica Centre, Linz, Austria
- *Oribotics [the future unfolds]*, Like a Second Nature, Volkswagon, Berlin, (Ars Electronica)
- *Oribotics [the future unfolds]*, ITU Telecom World, Bangkok, Thailand (Ars Electronica)
- *Oribotics [the future unfolds]*, VIVID Festival Sydney, Australia
- *Fixing History*, CERN Computing Centre
- 2012** • *nano-scale-fold*, Wonderland, Museum of Contemporary Art Taipei
- *Oribotics [the future unfolds]*, Centre d'Art Contemporain Genève, Switzerland
- *Oribotics [the future unfolds]*, Bremen Fablab, Bremen
- 2011** • *Fixing History*, CERN, Ars Electronica Futurelab
- 2010** • *Oribotics [the future unfolds]*, Tokyo Design Touch, Tokyo, Japan
- *Oribotics [the future unfolds]*, Ars Electronica Museum, Linz, Austria
- *Oribotics [futurelab]*, Ars Electronica Festival, Linz, Austria
- 2009** • *RadioBots*, Shepparton Art Gallery
- *Oribotics [network]*, *Robodays Robot Festival*, Denmark
- *Oribotics [de]*, *Künstlerdorf Schöppingen*, Germany
- 2008** • *Oribotics [dublin]*, ArtBots 2008, Science Gallery, Dublin
- *Oribotics [SLQ]*, *State Library of Queensland*
- *Trouble on Planet Earth*, Adelaide Fringe Festival 2008
- *Giant Wishing Cranes*, Sydney Festival for the Arts
- 2007** • *Oribotics [network]*, Melbourne International Arts Festival, Federation Square, Melbourne
- *Folding Australia 2007*, Origami Convention Director, Melbourne
- *Artist in Residence*, Federation Square, Melbourne
- 2006** • *1001 Cranes*, Federation Square
- *Oribotics [laboratory]*, Paper show, Perth Institute of Contemporary Art
- *Oribotics [laboratory]*, SheppARTon Festival, Shepparton Regional Art Gallery
- *Oribotics [laboratory]*, Unnatural Selection, Manning Regional Art Gallery
- *ABC Sunday Arts TV*, Presenter for Origami teaching segments
- 2005** • *Oribotics [laboratory]*, Asialink Centre, Melbourne University
- *Oribotics*, Dorkbot Ghent - DorkFest, Ghent, Belgium
- *Oribotics*, Victorian Circus New Media Festival, Amsterdam, Holland
- *Origami House*, Melbourne Origami Group, Latrobe Regional Gallery, Morwell
- *Oribotics*, Latrobe Regional Gallery, Morwell
- *Origami*, Project mentor for Phillip Adams & Ballet Lab.
- 2004** • *Oribotics*, Electrofringe, curated by Gail Priest, Newcastle Regional Gallery, Newcastle
- *Oribotics*, Next Wave Festival, TCB/Uplands Gallery, Melbourne
- 2000** • *Temple of Dreams*, Next Wave Festival, E-media Gallery, CCP, Melbourne
- 1999** • *Corrupted 2 - Chunky Move CDROM*, Drome Pty Ltd, Chunky Move, Cinemedia
- 1998** • *Roadkill Navigator*, E-media Gallery, CCP, Melbourne
- *Roadkill Navigator*, curated by Experimenta, Institute of Modern Art, Brisbane
- 1997** • *VCA Graduate Photography*, Centre for Contemporary Photography, Melbourne

Residences / Appearances

2016 *Kyoto Institute of Technology, ORI Folding = code for matter*, Kyoto, Japan
2012 *Opening Keynote address, TEI 2012, Kingston, Ontario, Canada*
2010 *Ars Electronica Futurelab Artist in Residence*, Linz, Austria.
2008 *Schöppingen Artist in Residence*, Schöppingen, Germany.
2008 *PICA Artist in Residence*, Perth, Australia.
2007 *Federation Square Company in Residence*, Melbourne.
2005 *Australia Council Studio Residency*, Tokyo, Japan.
2004 *Origami House - Tanteidan 10, origami convention mentoree*, Tokyo, Japan.
2003 *Digital Artist @ Latrobe Regional Gallery*, Supported by NETS Victoria.

Grants/Awards

2019 *PEEK*, FWF (Austrian Science Fund), ORI*botics the art and science of robotic origami, Vienna, Austria
2013 *PEEK*, FWF (Austrian Science Fund), €250,000. 36 month funding, Vienna, Austria
2013 *Australian Postgraduate Award*
2010 *Rupert Bunny Fellowship*, City of Port Phillip, Melbourne, Australia.
2010 *New work (established)*, Australia Council Visual Arts Board
2009 *Ars Electronic Futurelab Residency*, Novamedia, Ars Electronica, Australia Council.
2008 *Radiobots*, Arts Victoria Community Board.
2008 *Professional Development Grant*, Australian Network for Art & Technology.
2007 *Trouble on Planet Earth*, Australia Council InterArts Board
2007 *Oribotics [network]*, Arts Victoria Arts Innovation Board.
2006 *Professional Development Grant*, Australian Network for Art & Technology.
2005 *RUN_WAY*, Ozco New Media Arts Board.
2005 *Tokyo Studio Residency*, Ozco Visual Arts and Craft Board.
2005 *Oribotics [laboratory] presented by Aphids*, Ozco New Media Arts Board.
2005 *Oribotics [laboratory] presented by Aphids*, Arts Victoria Arts Craft Board.
2005 *Oribotics [laboratory] presented by Aphids*, Melbourne City Council.
1997 *George Hicks Award, VCA*, for 'Roadkill Navigator' interactive work.

Commercial Publications

2019 *Ultimate Origami*. Hinkler Books
2017 *ORIGAMI Day of the Dead*. Hinkler Books
2013 *Designer Origami*. Hinkler Books
2008 *Everything Origami*. Hinkler Books, ISBN 978-1-7418-2567-1.
2007 *Folding Australia 2007 Origami Convention Book*. ISBN 0-9757463-0-1 Airstrip Ed. D. Scott.
2005 *Folding Australia 2005 Origami Convention Book*. ISBN 0-9757463-0-8 Airstrip Ed. M. Gardiner.
2003 *Folding Australia 2003 Origami Convention CDROM*. Airstrip Ed. M. Gardiner.
2000 *Temple of Dreams CDROM*.

Selected Academic Publications

Gardiner, M. (2019). *ORI* on the Aesthetics of Folding and Technology* [University of Newcastle]. <http://hdl.handle.net/1959.13/1397831>
Gardiner, M., Aigner, R., Ogawa, H., and Hanlon, R. 2018a. *Fold Mapping: Parametric Design of Origami Surfaces with Periodic Tessellations*. 7th Origami Science Mathematics and Education Conference.
Gardiner, M., Aigner, R., Ogawa, H., Hanlon, R., and Reitbock, E. 2018b. *Fold Printing: Using Digital Fabrication of Multi-Materials for Advanced Origami Prototyping*. 7th Origami Science Mathematics and Education Conference.
Gardiner, M. 2015. *Folding and unfolding a million times over: Longevity, origami, robotics and biomimetics as material thinking in Oribotics*. *Symmetrion* 26, 2, 189–202.
Gardiner, M., Ogawa, H., Lindinger, C., et al. 2012. *SWITCH: case study of an edutainment kit for experience design in everyday life*. Proceedings of the Sixth International Conference on Tangible, Embedded and Embodied Interaction, ACM, 271–274.
Hörtner, H., Gardiner, M., Haring, R., Lindinger, C., and Berger, F. 2012. *Spaxels, Pixels in Space - A Novel Mode of Spatial Display*. SIGMAP, SciTePress, 19–24.
Gardiner, M. 2007. *The code in the fold. Origami as art and Science*. Bell on the Hand, Future Design Institute,