

Employment

- **University of Melbourne**, Department of Mathematics and Statistics: Research Fellow, 2010–present
- **University of Texas at Austin**, Mathematics Department: Lecturer, 2007–2010
- **Stanford University**, Mathematics Department: Graduate student, 2001–2007

Education

- **Stanford University**, Ph.D. in Mathematics under Steven Kerckhoff. Thesis (2007): *Incompressible Surfaces in Hyperbolic Punctured Torus Bundles are Strongly Detected*
- **University of Oxford**, Master of Mathematics (MS), 2001

Exhibitions

- *Bridges conference¹ 2010*
 - Sphere autologlyph
 - Torus autologlyph
- *Bridges conference 2011*
 - Space filling graph 1
 - Octahedron fractal graph
 - Cuboctahedral fractal graph

Artistic Projects

- *3D printed sculptures* - on mathematical themes. Many of the pieces are procedurally generated.
- *Book Covers* - procedurally generated images used on the covers of text books.
- *Escher's Printgallerly at Stanford* - a photographic version of Escher's "Printgallerly", with Paul-Olivier Dehaye. Made for a public lecture by Hendrik Lenstra, who discovered the mathematics behind Escher's image.
- *Virtual sculpture within Second Life* - many procedurally generated and/or interactive. Some produced as part of learning experiences (see next section).
- *Colloquium Posters* - for advertising department colloquia.
- *Mathematical T-shirt designs* - for mathematics departments or clubs, and some other designs.
- *Wordlesque* - word clouds, describing word frequency features of a dialogue with position. With Yla Tausczik.
- *"Autologlyphs"* - self referential mathematical typography.

Other Relevant Experience

- I am an Associate Editor for the *Journal of Mathematics and the Arts*.
- Work with the **New Orleans Center for Creative Arts²**: I served on the "NOCCA Advisory Council", a group convened to help guide the transition of NOCCA from a half-day arts school to a full-day diploma-granting institution covering all subjects, whilst preserving the creativity and spirit of this highly successful school, April 2009.
- I am currently working with NOCCA on the curriculum framework for their mathematics program, in particular highlighting connections between mathematics and the arts. In addition, I will act as a consultant on these connections, for both students and teachers at NOCCA.
- I created mathematical learning experiences based around mathematical sculp-

¹ The [Bridges conference](#) is an annual international meeting on connections between art and mathematics, featuring invited speakers, full and short paper presentations, educational workshops, and a juried art exhibition.

²NOCCA, the New Orleans Center for Creative Arts, is a pre-professional arts training center that offers secondary school-age children intensive instruction in dance, media arts, music, theatre arts, visual arts and creative writing.

tures in the virtual world Second Life, funded by the New Media Consortium³, September 2006.

Publications & Preprints

- **Mathematical Art**
 - *Fractal graphs by iterated substitution*, 20 pages, 20 figures, *Journal of Mathematics and the Arts*, ©Taylor and Francis, Volume 5, Issue 2, 2011, pp. 51–70.
 - *The Sunflower Spiral and the Fibonacci Metric*, 2010, *Proceedings of the Bridges conference 2010*, 4 pages, 4 figures.
 - *Autoglyphs*, with P.-O. Dehaye, in *Math. Intell.* **26** (2004), no. 2, [cover art](#) and pp. 37–39.
- **Other publications**
 - 2 preprints and 5 papers published in peer reviewed mathematics journals.

Arts Related Talks

- *The Sunflower Spiral and the Fibonacci Metric*, Bridges Pécs, Pécs, Hungary, July 2010
- *Autoglyphs: Self Referential Mathematical Typography*, Gathering 4 Gardner 9, Atlanta, March 2010
- *The Mathfest 2009 Poster Image, Mathematical Art, Design and Education in Second Life*, Mathfest 2009, Portland, August 2009
- *Drawing knots using computers*, The Unknot Conference, Denison University, July 2009

Personal

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³The [New Media Consortium](#) is an international 501(c)3 not-for-profit consortium of nearly 200 leading colleges, universities, museums, corporations, and other learning-focused organizations dedicated to the exploration and use of new media and new technologies.