

Saul Griffith

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Education

2004 Ph.D. Massachusetts Institute of Technology, Media Laboratory

"Growing Machines." Programmable assembly and self-replicating machines. First autonomous, self-replicating machines implemented in hardware. Constructive proof that a linear string of polyhedra can fold without self-intersecting into arbitrary 3D structure.

2001 M.S. Massachusetts Institute of Technology, Media Laboratory

Master's degree by research. Micron and Sub-micron scale rapid prototyping. Designed and developed novel 3-dimensional, multiple material, methods and apparatus for processing nanocrystalline suspensions into electronically functional devices.

2000 ME. University of Sydney, Australia

Master's degree by research. Fibre Composite Materials. Developed and designed machinery for reprocessing post-consumer textiles and post consumer thermoplastics into structural building materials.

1997 B.Met. EUniversity of New South Wales, Australia

Honors, 1st class. Honors Thesis: Bainitic Transformations in Carbon Steels.

Professional Experience

2007 co-Founder Optiopia, Inc.

Developing low cost solutions for testing refractive error and supplying corrective eyeglasses. Role: Advisor to President, David Grosf

2006 co-Founder Makani Power

Renewable energy start-up currently in "stealth" mode. Role: President & Chief Scientist

2006 co-Founder Potenco www.potenco.com

Human-powered solutions for electronic devices. Role: Advisor to CEO, Colin Bulthap

2005 co-Founder Instructables LLC www.instructables.com

Open source step-by-step hardware construction collaboration. Role: Advisor to CEO, Eric Wilhelm, Ph.D.

2004 co-Founder Squid Labs LLC

"Do Tank" research lab based in Emeryville, California. Role: Inventor

2004 co-Founder HowToons LLC

A mischievous, informal science education through comic books. Role: Author with Joost Bensen and Nick Dragotta

Technical Advisor:

Make Magazine
Popular Mechanics Magazine

Columnist / Contributor:

Make Magazine, Craft Magazine

Author of "HowToons"

120 page graphic novel to be published under Harper Collins, October 2007

Awards

2007 – MacArthur Fellows recipient

2006 - WIRED "Rave" awards
2005 - Time Magazines "Top Inventions of 2005" (Smart electronic rope)
2005 - Technology Review Magazines' TR35, 35 Top Innovators under 35 "Technologist in the aid of humanity" award
2003 - Lemelson-MIT \$30,000 Student Prize for invention
2003 - MIT IDEAS competition award, Boeing Company Domestic Prize
2002 - Australian Academy of Technical Sciences and Engineering Symposium Fellow
2001 - National Inventors Hall Of Fame, National Collegiate Inventors Award
2000 - MIT LEGO Fellow
1998-2004 - Research Assistantship, MIT Media Laboratory
1994/5 - UNSW / UC Berkeley International Student Exchange
1993-98 - UNSW Co-Op Scholarship

Talks, Panels & Speaking Engagements

2007 Google/Nature Science FOO Camp. "Energy & Power"
2007 Lemelson Institute Retreat, keynote speaker. "Creating Space for Invention"
2007 McKinsey Executive Conference. "Tinkering at the Future"
2007 NEXTGENS Series, Georgia Tech. "Fast Boats and Flying Things: Combining Kites, Computation and Control Systems to Break the World's Speed Record"
2007 MIT FAB LAB Symposium. "Making Trouble"
2007 Google Tech Talk. "Global Energy from 20,000 feet"
2006 TED conference. "Future of Fabrication"
2006 Gathering For Gardner. "Folding any 3D object from a string"
2006 Invited Speaker Designer, IDEO in house talks. "Logic in design"
2006 Institute for the Future invited speaker. "Future of Fabrication"
2006 Berkeley CITRUS presentation: "Fabrication and OS Hardware"
2005 Panelist: O'Reilly Emerging Technologies Conference. "Future of Fabrication"
2005 Microsoft Research, Seattle: "Digitisation of fabrication"
2005,2004,2003 FOO Camps: "Howtoons", "Open Source Hardware"
2005 Keynote Speaker. O'Reilly OSCON 2005. "Open Source Hardware"
2002 Speaker, Australian Academy of Science and Engineering. "Innovation in Education"
2001 Moderator and Panelist, "Development by Design" conference, MIT
TTI Vanguard, NEXTGENS Technologies, Invited Speaker
Numerous MIT Media Lab Consortium talks
Numerous academic conference talks

Selected Patents & Publications

Pat Pending: US Application 20030052425: Lens molding apparatus and related methods
Pat Pending: US Application 20050231207: Electronic Elongation Sensing Rope
Self-replication from random parts. S. Griffith, D. Goldwater, J.M. Jacobson. NATURE. Vol. 437,29 September 2005, pp. 636

Nanostructure fabrication by direct electron-beam writing of nanoparticles. S. Griffith, M. Mondol, D. Kong, J. Jacobson. *Journal of Vacuum Science & Technology B: Microelectronics and Nanometer Structures*, Vol. 20, No. 6, pp. 2768–2772, November 2002

High Resolution Micromachined Interferometric Accelerometer. E.B. Cooper, E.R. Post, S. Griffith, J. Levitan, S.R. Manalis, M.A. Schmidt, C.F. Quate. *Applied Physics Letters*, Vol. 76, No.22, May 2000

Growing Machines. MIT PhD Thesis, Program in Media Arts and Sciences, September 2004

US 6,348,295; US 6,664,027: Methods for manufacturing electronic and electromechanical elements and devices by thin-film deposition and imaging

Towards Personal Fabricators: Tabletop tools for micron and sub-micron scale functional rapid prototyping. MIT Master's Thesis. MIT Libraries, 2001

Thinkcycle at MIT. Sharing Distributed Design Knowledge for Open Collaborative Design. N. Sawhney, S. Griffith, Y. Maguire, T. Prestero, TechKnowLogia, Jan-Mar 2002, pp.49

Research Interests

Optics: Low cost approaches to lens manufacture and refraction

Minimal energy surfaces and systems for manufacturing

Rapid Prototyping and personal fabrication

Open Source Hardware

Self-replicating machines and self / programmable assembly

Low speed aerodynamics, aeroelastics

Analytical Geometry and theory of folding

Teaching Experience

M.I.T. Teaching Assistant, MAS.863, "How To Make Almost Anything"

M.I.T. Teaching Assistant MAS.890, "Wind-Up Browser"

M.I.T. Coordinator, Initiator, MAS.890 "Design That Matters"

M.I.T IAP Classes:

Parafoil Building Workshop

Printed Bicycle Building Workshop

Cyclomerisation: LEGO bicycle kit workshop

Inflatable Kite Building Workshop

Howtoons Educational Outreach via cartoons and workshops

Science Museum of Minnesota, Zeum Children's museum San Francisco, MIT Museum