

JENNIFER JACOBS

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Education

Ph.D., Massachusetts Institute of Technology
Cambridge, Massachusetts, 2013-2017
PhD Thesis: *Dynamic Drawing: Broadening Practice and Participation in Procedural Art*
MIT Media Lab
Advisor: Mitchel Resnick
Readers: Joel Brandt, Golan Levin

Masters of Science, Massachusetts Institute of Technology
Cambridge, Massachusetts, 2011-2013
Masters Thesis: *Algorithmic Craft: the Synthesis of Computational Design, Digital Fabrication, and Hand Craft.*
MIT Media Lab
Advisor: Leah Buechley
Readers: Mitchel Resnick, Neri Oxman

Master of Fine Arts, Hunter College
New York, New York, 2008-2011
Integrated Media Arts Program
Advisor: Ricardo Miranda
Readers: Rachel Stevens, Lee Wells

Bachelor of Fine Arts, University of Oregon, Cum Laude
Eugene, Oregon, 2002-2007
Major: Digital Arts
Minor: Political Science
Advisors: Chris Coleman, Michael Salter

Employment

(Forthcoming) Assistant Professor, Media Arts and Technology, UCSB
Santa Barbara, California, appointment beginning July, 2019.

Postdoctoral Fellow, Computer Science, Stanford University
Palo Alto, California, 2017-present
Conducting research in creative systems engineering, digital fabrication design tools, and creativity support. Supervisor: Maneesh Agrawala.

Research Assistant, MIT Media Lab
Cambridge, Massachusetts, 2011-2017
Researched methods of integrating computation and electronics with traditional construction practices to engage diverse audiences in designing and building their own technologies.

Artist in Residence, Pier 9, Autodesk
San Francisco, California, August 2016- December 2016
Modified large-format 3-Axis computer numerically controlled (CNC) machine to support real-time interactive control and gestural manipulation, and developed supporting software interface. Designed wireless tool-changing mechanism for use in interactive CNC project.

Research Intern, Dynamic Medium Group, Human Advancement Research Community
Oakland, California, May 2016-December 2016
Collaborated with research team to prototype and evaluate direct-manipulation based tools for procedural design, generative drawing, and digital fabrication.

Research Intern, Adobe Creative Technologies Lab
San Francisco, California, June 2014-August 2014 and May 2015-September 2015
Designed and prototyped novel procedural and parametric digital illustration tools. Evaluated the tools through workshops with professional artists.

Interactive Developer, Visual Goodness
New York, New York, 2010
Designed and developed interactive web and mobile applications for commercial clients.

Designer and Developer, Tiltfactor Game Research Lab
Dartmouth College, Hanover, New Hampshire, 2009
Designed and programmed interactive games aimed at promoting social change.

Interactive Developer, Operand
New York, New York, 2008
Developed software for museum installations and learning-based applications.

Teaching Experience

Teaching Assistant, MIT Media Lab
Cambridge, Massachusetts, 2016
Served as teaching assistant for Mitchel Resnick's Learning Creative Learning class.

Adjunct Instructor, Hunter College
New York, New York, 2009-2011
Taught courses in game programming and new media for undergraduate students.

Instructor, University of Long Island
Brooklyn, New York, 2010
Taught early immersion courses in interactive game design and development for 4th and 5th grade students.

Visiting Instructor, York College
Queens, New York, 2010
Taught courses in online interaction and internet culture for advanced high-school students.

Invited Workshops

Artist in Residence, School for Poetic Computation.
New York, New York, 2018.
Invited to spend a week in residence at the School for Poetic Computation- an independent art and technology program in New York. Observed and interviewed students and faculty and advised students on their projects during the fall 2018 semester.

Digital Naturalism Conference.
Koh Lon, Phuket, Thailand, 2018.

Invited to participate in the first Digital Naturalism Conference, a two month conference for exploring intersections of technological development, field biology, and interaction design, situated on an island near Phuket Thailand.

Blending Computational and Manual Drawing, Shakerag, St. Andrews- Sewanee School.
Sewanee, Tennessee, 2017.

Conducted one-week workshop for adult craftspeople that explored techniques and practices for blending drawing with code and drawing by hand.

Procedural Embroidery Design, Portland Art Museum.
Portland, Oregon, 2015.

Conducted one-day workshop for museum attendees that applied computational design approaches to the creation of embroidered fabrics. This was a component of the Portland Art Museum Exhibition on Italian Style: Fashion Since 1945.

Computational Tattoo Design, ApexArt Gallery.
New York, New York, 2014.

Conducted one-day workshop for adult practitioners that demonstrated techniques for the computational design and manufacture of temporary tattoos and body art.

Computational Design Workshop, Computer Clubhouse Conference.
Denver, Colorado, 2014.

Conducted one-day professional development workshop for educators and facilitators, demonstrating approaches to introduce young people to computational design.

Super Fashion, NuVu Magnet Innovation Center For Young Minds.
Cambridge, Massachusetts, 2012.

Led a two-week workshop with high-school students combining computational design and digital fabrication to create clothing and fashion accessories.

Paper-Based Electronics, MIT Museum.
Cambridge, Massachusetts, 2012.

Co-led a one-day workshop with elementary school students to create paper-based electronic circuits with sensors, microcontrollers, and lights.

Les Chaises Rebelles, École Nationale Supérieure des Arts Décoratifs.
Paris, France, 2012.

Co-led a five-day workshop with college design students in rethinking relationships with functional objects through the modification of chairs with electronics, computation, and traditional art-and-craft approaches.

Publications

Conference Papers

Jennifer Jacobs, Joel Brandt, Radomir Mech, and Mitchel Resnick. Extending Manual Drawing Practices with Artist-Centric Programming Tools. *In Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems*, Montreal, Québec, Canada, April 2018. 🏆 Best paper award (top 1% of all papers).

Jennifer Jacobs, Sumit Gogia, Radomir Mech, and Joel Brandt. Supporting Expressive Procedural Art Creation through Direct Manipulation. *In Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems*, Denver, Colorado, USA, April 2017. 🏆 Best paper award (top 1% of all papers).

Jennifer Jacobs and Amit Zoran. Hybrid Practice in the Kalahari: Design Collaboration Through Digital Tools and Hunter Gatherer Craft. *In Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems*, Seoul, Korea, April 2015.

Jennifer Jacobs, Mitchel Resnick and Leah Buechley. 2014. DressCode: supporting youth in computational design and making. *In Proceedings of Constructionism 2014 Conference*. Vienna, Austria.

Jennifer Jacobs and Leah Buechley, Codeable Objects: Computational Design and Digital Fabrication for Novice Programmers. *In Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems*, Paris, France, April 2013.

Conference Workshops and Demonstrations

Jingyi Li, **Jennifer Jacobs**, Michelle Chang, and Bjoern Hartmann. 2017. Direct and immediate drawing with CNC machines. *In Proceedings of the 1st Annual ACM Symposium on Computational Fabrication (SCF'17)*. ACM, New York, NY, USA (poster).

Jennifer Jacobs, David Mellis, Amit Zoran, Cesar Torres, Joel Brandt, and Joshua Tanenbaum. Digital Craftsmanship: HCI Takes on Technology as an Expressive Medium. *In Proceedings of the ACM Conference on Designing Interactive Systems*, Brisbane, Australia, June 2016. (workshop)

Jennifer Jacobs and Leah Buechley, Combining Craft, Computation, and Digital Fabrication. *In FabLearn: Digital Fabrication and Education Conference*, Stanford University, California, 2012. (workshop)

Jennifer Jacobs and Leah Buechley,, Codeable Objects Software. *In The 3rd annual Open Hardware Summit, Open Source Hardware Association*, New York, New York, 2012. (demonstration)

Magazine Publications

Jennifer Jacobs. 2017. Finding the edge: Art and automation. *XRDS* 24, 3 (April 2018), 5-6.

Jennifer Jacobs. 2017. Multidisciplinary systems engineering. *XRDS* 24, 2 (December 2017), 5-6.

Jennifer Jacobs. 2017. Technology in defense of democracy. *XRDS* 23, 3 (April 2017), 5-7.

Jennifer Jacobs. 2016. From prototype to product: deployment strategies in computer science research. *XRDS* 23, 1 (September 2016), 5-6.

Jennifer Jacobs. 2016. Supporting creativity, expressiveness and complexity through personal fabrication. *XRDS* 22, 3 (April 2016), 5-7.

Jennifer Jacobs. 2016. Negotiating science, technology, culture, and religion: the art and ideas of Laleh Mehran. *XRDS* 22, 4 (June 2016), 36-41.

Invited Talks and Panels

2018 Invited Speaker, Visiting Artist Series, SUNY Oswego. Oswego, NY, USA.

Extending Manual Drawing Practices with Artist-Centric Programming Tools, Best of CHI Session, SIGGRAPH. Vancouver, British Columbia, Canada.

Invited Speaker, Programming Languages for Creative Expression, Curry On Conference. Amsterdam, Netherlands.

Supporting Diverse Computational Creation, Creativity and Collaboration Symposium, National Academy of Sciences. Washington DC, USA.

Invited Speaker, Design Field Notes Series, Jacobs Institute for Design Innovation, University of California, Berkeley. Berkeley, California, USA.

2016 Gestural Control for Digital Fabrication, Artist Talk, Pier 9 Workshop, Autodesk, San Francisco, California.

2015 Computational Making, Royal College of Art, London, United Kingdom.

Panelist for Momentum: Women/Art/Technology, University of Denver, Denver, Colorado.

Tensions and Opportunities in Combining Computational and Manual Practices, Berkeley Institute of Design, University of California, Berkeley, California.

Reconciling Programming and Making, Portland Art Museum, Portland, Oregon.

- Computational Craft: Applying Procedural Representations to Making, Graduate School of Visual Art, Boston University.
- 2014 Designing Programming Tools for Artists, Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology, Cambridge, Massachusetts.
- Para Sneak Peek, Adobe MAX Conference, Nokia Theater, Los Angeles.
- Panelist, “Technology and Education Panel”. WeCode Conference, Harvard University, Cambridge, Massachusetts.
- 2012 Guest Speaker, Programming and Digital Fabrication for Wearables, MIT Women and Technology Program, Massachusetts Institute of Technology.
- Emergent Creativity in Computer Science: Iterative Design through Code, Science and Engineering Program for Teachers, Massachusetts Institute of Technology.
- 2010 Jennifer Jacobs and Leslie Synn, Building a Narrative Atlas: Mapping Forms of Communication. In Communicating Forms: Aesthetics, Relationality, and Collaboration, University of Chicago, Illinois.

Exhibitions

- 2016 Pier 9 Residency Showcase, *Autodesk Pier 9*, San Francisco, California.
- Alchemists of Our Time Exhibition, *Ars Electronica*, Linz, Austria.
- 2015 Hybrid craft: Showcase of Physical and Digital integration of Design and Craft Skills, *SIGGRAPH Art Gallery*, Los Angeles, California.
- Object Stories, *Portland Art Museum*, Portland, Oregon.
- 2013 High-Low Tech: Integration of Art and Technology, University Gallery at UMass, Lowell, Massachusetts.
- 2011 Oregon Design Conference Exhibition, American Institute of Architects, Portland, Oregon.
- 2010 Pixilerations, First Works Festival, Rhode Island School of Design, Providence, Rhode Island.
- Glasshouse, Tractor Gallery, Portland Oregon.
- 2009 Formless in Context: A Study of Chaos and Discourse, Beta Spaces, Brooklyn, New York.
- Blur + Sharpen Animation Festival, University of Southern California School of Cinematic Arts, Los Angeles, California.
- Expo, Eyebeam, New York, New York.
- Surface Value Tractor Gallery, Portland, Oregon.
- 2007 Perpetual Art Machine, Traveling Project/Show, Art Basel Miami, Florida.
- Teleculture, Pace Digital Gallery, New York, New York.
- Contract, LumpWest Project Space, Eugene, Oregon.
- Perfect Attendance, Terminal B.F.A exhibition, Eugene, Oregon.
- Selected Works from DARTS at U of Oregon, Lamar Dodd Gallery, Lamar Dodd School of Art, The University of Georgia, Athens, Georgia.
- 2006 Automaphile, Laverne Krause Gallery, Eugene, Oregon.

Academic Service

Guest Critic, Factories of the Future Course Midterm Review, California College of the Arts, San Francisco, CA, 2016.

Guest Critic, Introduction to the Design of Smart Products Course Final Review, Stanford University, Palo Alto, California, 2016.

Co-Editor in Chief, XRDS Crossroads: The ACM Magazine for Students, 2015-2017.

Member, MIT Media Lab Student Committee, Cambridge, Massachusetts, 2014-2015.

Reviewer, Students Offering Support Program, MIT Media Lab, Cambridge, Massachusetts, 2015-present.

Invited Subcommittee Member, Hybrid Craft Art Gallery, SIGGRAPH, Los Angeles, California, 2015.

Reviewer for CHI, UIST, DIS, TEI, Development Southern Africa, DRS2018, and Transactions of Visualizations and Computer Graphics.

Designer and Coordinator, MIT Media Lab Student-Faculty Survey, Cambridge, Massachusetts, 2013-2014.

Facilitator, MIT Media Lab How-To Course, Cambridge, Massachusetts, 2014.

Member, MIT Media Lab Diversity Committee, 2011-2014.

Guest Critic, Dynamic Media Institute Masters Thesis reviews, Massachusetts College of Art and Design, Boston, Massachusetts, 2012.

Scholarships, Grants and Funding

Research Donation, *Creative Technologies Lab*, Adobe Research, San Francisco, California, 2014-present.

Graduate Student Research Assistant Fellowship, MIT Media Lab, Massachusetts Institute of Technology, Cambridge, Massachusetts, 2011-present.

Graduate Academic Fellowship, Office Of Scholarship and Welfare Hunter College, New York, New York. 2009-2011.

Digital Arts Merit Scholarship, University of Oregon Eugene, Oregon, 2006

Mentorship and Collaboration

Students Supervised

Michelle Lam, Masters Student, Computer Science, Stanford University

Lawrence Zhou, Masters Student, CCRMA, Stanford University

Sumit Gogia, Masters Student, Massachusetts Institute of Technology

Meridian Witt, Bachelors Student, Wellesley College

Julia Guo, Bachelors Student, Massachusetts Institute of Technology

Hailan Pang, Bachelors Student, Massachusetts Institute of Technology

Katie Lee, Bachelors Student, Massachusetts Institute of Technology

Yi Tong, Bachelors student, Wellesley College

Collaborators

Leah Buechley (MIT), Mitchel Resnick (MIT), Cesar Torres (Berkeley), Joel Brandt (Snap Inc), Radomir Mech (Adobe), Sumit Gogia (Coursera), David Mellis (Autodesk), Amit Zoran (Hebrew University), Nicholas Gillian (Google), Phillipa Mothersill (MIT), Xiao Xiao (MIT), Kim Smith (MIT), Fish McGill (MassArt), Ben Tritt (ArtMATTR), Maneesh Agrwala (Stanford) Jingyi Li (Stanford), Bjoern Hartmann (Berkeley), Ohad Fried (Stanford), Adam Finkelstein (Princeton), Haijun Xia (University of Toronto).