Marcelo Coelho

https://cmarcelo.com/
https://designintelligence.mit.edu

EDUCATION

2008 – 2012 Cambridge, MA	**Massachusetts Institute of Technology** Ph.D. in Media Arts and Sciences Thesis: Materializing Interaction Advisor: Pattie Maes Readers: Neri Oxman and Jeffrey Huang
2006 – 2008 Cambridge, MA	**Massachusetts Institute of Technology** M.S in Media Arts and Sciences Thesis: Materials of Interaction : Responsive Materials in the Design of Transformable Interactive Surfaces Advisor: Pattie Maes Readers: William J. Mitchell and Joseph Paradiso
2000 – 2005 Montreal, QC	**Concordia University** BFA Specialization in Computation Arts Double major in Études françaises Awarded the Computation Arts Prize for Best Graduating Student
1998 – 2000 São Paulo, Brazil	**University of São Paulo** Course work in Cinema

WORK EXPERIENCE

2016 – Present Cambridge, MA	FORMLABS **Head of Design** Responsible for the creative vision and leadership of Formlabs' brand, product design and user experience.
2016 – Present Cambridge, MA	MIT ARCHITECTURE **Lecturer** Curriculum development and teaching in industrial design, interaction design, and artificial intelligence. Principal investigator in industry sponsored research focused on human-computer interaction and creative applications of artificial intelligence.
2012 – Present Cambridge, MA	MARCELO COELHO STUDIO **Principal** Studio specializing in interactive and computation-based work. Research, design and fabrication of products, live experiences, installations, commissions and limited-edition work.
2015 – 2017 San Francisco, CA Cambridge, MA	LOGIC INK **Co-Founder and Advisor** Startup developing skin-based interfaces by using biological and chemical inks that change color in response to body and environmental stimuli.
2006 – 2012 Cambridge, MA	MIT MEDIA LAB – FLUID INTERFACES GROUP **Research Assistant** Research and design of novel human-computer interfaces, computational materials, electronic textiles, wearable computers, and digital fabrication at multiple scales.
06/2009 – 08/2009 Cupertino, CA	APPLE **Interaction Design Researcher** Software and hardware design and prototyping for future interaction technologies. Co-inventor of Force Touch and Taptic Engine touchpad.

09/2004 – 08/2006   XS LABS
Montreal, QC   **Research Partner**
Research, planning and development of wearable technology, electronic textiles and tangible media. Management of a multi-disciplinary research team.

ADVISING

Thesis Advisor. Jin Gao. Urban Dynamics: LLM Agents for Simulating Urban Development, MIT 2024.

Thesis Advisor. Bukunmi Shodipo. In Tension: Artists, AI and the Collaborative Space in Between Them, MIT 2024.

Thesis Advisor. Diego Yañez-Laguna. Exploring Alternative Music-Making Methods & Tangible Interfaces, MIT 2024.

Thesis Reader. Dexter Callender. Matters of Illuminance: Translating Light into Material Artifacts, MIT 2024.

Thesis Reader. Jayson Kim. MIT, 2022.

Thesis Reader. En-Han Thaddeus Lee. 2.5D: Novel Material Dimensions with 3D Printing on Fabric. MIT, 2022.

Thesis Advisor. Janice Tjan. Listening in: An Exploration of Forms for Hearing Aid Design. MIT, 2022.

SERVICE

Jury for Architizer Vision Awards, 2023.

Jury for Core77 Design Award - Lifestyle & Tools Categories, 2023.

Reviewer for MIT Undergraduate Admissions: Visual Arts and Architecture Portfolio. 2022 - 2023.

Jury CLUE (Community Lighting for the Urban Environment), 2019.

Reviewer for CHI, TEI, and SIGGRAPH from 2004 - 2012.

Conference Co-Chair. TEI'10: International Conference on Tangible, Embedded and Embodied Interaction. 2010.

FUNDING

Industry Gift for AI and Lighting Research. Aputure Lighting. $30,000.

Course Development Grant: Design Intelligence. 2021 Alumni Class Funds. $50,000

Industry Sponsored Research. Philips Lighting North America Corporation - Phase 2. $150,000

Industry Sponsored Research. Philips Lighting North America Corporation - Phase 1. $150,000

TEACHING

4.043 / 4.044: Design Studio: Interaction Intelligence. 2019 - 2024.

4.031 Design Studio: Objects and Interaction. 2016 - 2024.

4.S00 / 4.S12 Special Subject: Design Intelligence. 2022.

IAP Workshop. Hacking the Holodeck. 2017.

MAS.962 Techniques for Design and Fabrication. 2008.

Shape Changing Architecture Workshop. Royal Danish Academy. 2006.

PUBLICATIONS

2024   Coelho, M. and Labrune, JB. Large Language Objects (LLO). Revue Azimuts, 2024. Ésadse/Cité du Design. (Under review)

Guest Editor for the 3D Printing and Additive Manufacturing Journal - Special Edition on Artificial Intelligence and Digital Fabrication. Mary Ann Liebert, Inc., publishers, 2023. (In progress)

2017   Coelho, M. Computational Skins. Active Matter. MIT Press. 2017.

Coelho, M. and Grossman, T. Crowd-Driven Pattern Formation: Computational Strategies for Large Scale Design and Assembly. Architectural Design Journal. Wiley. 2017.

2016   B Lafreniere et. al. Crowdsourced Fabrication. In UIST'16 Proceedings of the 29th Annual Symposium on User Interface Software and Technology. (UIST'16). (Tokyo, Japan)

2011   Co-editor of Material Computing, a special issue of the Journal of Personal and Ubiquitous Computing. Volume 15, Issue 2. 2011.

Zoran, A. and Coelho, M. Cornucopia: The Concept of Digital Gastronomy, in Leonardo: Journal of the International Society for the Arts, Sciences and Technology. Volume 44, Number 5, October 2011, pp. 425-431.

Zigelbaum, J. and Coelho, M. Six-Forty by Four-Eighty: an interactive lighting installation. In CHI '11 Extended Abstracts on Human Factors in Computing Systems (CHI '11). (Vancouver, Canada).

Coelho, M., Zigelbaum, J. and Kopin, J. Six-Forty by Four-Eighty: The Post-Industrial Design of Computational Materials, in the 5th Tangible, Embedded and Embodied Conference (TEI '11). (Madeira, Portugal).

Coelho, M. and Zigelbaum, J. Shape-Changing Interfaces, in the Journal of Personal and Ubiquitous Computing: Volume 15, Issue 2 (2011), Page 161.

2009   Coelho, M. and Maes, P. Shutters: A Permeable Surface for Environmental Control and Communication, in the 3rd Tangible and Embedded Interaction Conference (TEI '09). (Cambridge, UK).

Coelho, M., Poupyrev, I., Sadi, S. and Vertegal, R. Programming Reality: From Transitive Materials to Organic User Interfaces, in the Extended Abstracts of Conference on Human Factors in Computing Systems (CHI '09). (Boston, USA).

Coelho, M., Ishii, H. and Maes, P. Surflex: A Programmable Surface for the Design of Tangible Interfaces, in the Extended Abstracts of Conference on Human Factors in Computing Systems (CHI '08). (Florence, Italy).

2008   Coelho, M. and Maes, P. Sprout I/O: A Texturally Rich Interface, in the 2nd Tangible and Embedded Interaction Conference (TEI '08). (Bonn, Germany).

Coelho, M. and Maes, P. Responsive Materials in the Design of Adaptive Objects and Spaces, in the Interactive and Adaptive Furniture Workshop. (Aarhus, Denmark).

Coelho, M. and Maes, P. Playful Interactions in the Design of Everyday Things, in the International Symposium on Electronic Art (ISEA '08). (Singapore).

Zigelbaum, J., Coelho, M. et al. Violent Interfaces: The Jack Bauer Training Kit, in the International Symposium on Electronic Art (ISEA '08). (Singapore).

2007   Coelho, M. Programming the Material World: A Proposition for the Application and Design of Transitive Materials, in the 9th International Conference on Ubiquitous Computing (Ubicomp '07). (Innsbruck, Austria).

Coelho, M., Hall, L., Berzowska, J. and Maes, P. Pulp-Based Computing: A Framework for Building Computers Out of Paper, in the 9th International Conference on Ubiquitous Computing (Ubicomp '07). (Innsbruck, Austria).

Berzowska, J., Mainstone, D., Bromley, M., Coelho, M. et al. Skorpions: Kinetic Electronic Garments, in the 9th International Conference on Ubiquitous Computing (Ubicomp '07). (Innsbruck, Austria).

Coelho, M., Sadi, S., Maes, P., Oxman, N. and Berzowska, J. Transitive Materials: Towards an Integrated Approach to Material Technology, in the 9th International Conference on Ubiquitous Computing (Ubicomp '07). (Innsbruck, Austria, 2007).

Coelho, M. and Maes, P. Programming the Material World, in the 9th US National Congress on Computational Mechanics (USNCCM '07). (San Francisco, USA).

2006   Berzowska, J. and Coelho, M. SMOKS: The Memory Suits, in the Conference on Human Factors in Computing Systems (CHI '06). (Montreal, Canada).

Berzowska, J. and Coelho, M. Memory-Rich Clothing, in the Conference on Human Factors in Computing Systems (CHI '06). (Montreal, Canada).

2005   Berzowska, J. and Coelho, M. Kukkia and Vilkas: Kinetic Electronic Garments, in the 9th IEEE International Symposium on Wearable Computers (ISWC '05). (Osaka, Japan).

Coelho, M. DinnerWare: Why Playing With Food Should Be Encouraged, in the 32nd International Conference on Computer Graphics and Interactive Techniques (SIGGRAPH '05). (Los Angeles, USA).

2003   Daviault, C. and Coelho, M. Forum: A New Approach for the Production of Educational Content, in the 30th International Conference on Computer Graphics and Interactive Techniques (SIGGRAPH '03). (San Diego, USA).

INVITED TALKS

2023   Generative AI for Design. Innovations for the Next Generation of Mobility. Paris, France. October 2023

Conversation on Art, Artificial Intelligence and Synthetic Biology. Art + Technology: Bloomberg. September 2023.

Talk and Panel on Generative Art, Architecture and Engineering. The Cooper Union. New York, NY. April 2023.

2022   Keynote. Material Interfaces. Harvard Club of New York City. January 2022.

2021   Digital Fabrication and Pandemic Response. IDM Invited Speaker. April 2021.

2020   Computational Materials. ProtegeBR. June 2020.

Computational Materials. Lenovo Brazil. June 2020.

Digital Fabrication and Pandemic Response. MIT Media Lab Alumni Event. April 2020.

2019   Interactive Lighting. Philips Research. November 2019.

Computational Materials. MIT Industry Liaison Program - Industry Conference. September 2019.

Computational Materials. IDC Industry Conference. April 2019.

Computational Materials. MIT 150th Symposium: Digital Session. March 2019.

2018   Material Boundaries. MIT Research and Development Conference. Cambridge, MA. November 2018.

Computational Materials. Gather. Stockholm, Sweden. September 2018.

Computational Materials. MIT Innovation. Cambridge, MA. August 2018.

Computational Materials. Sanders Series TUX Invited Lecture. Toronto, Canada. March 2018.

2017   Design Matters. Design Miami/. Miami, FL. December 2017.

Designing How To Design. Digital Factory. Cambridge, MA. June 2017.

2016   Experience Futures. Unilever. New York, NY. April 2016.

2015   Interação Material. MIT Technology Review - EmTech Brasil. Rio de Janeiro, Brasil. November 2015.

Pop-Up Factory. Panel at Solid Conference. San Francisco, CA. June 2015.

Many-to-Many: Designing Crowd Interactions. Solid Conference. San Francisco, CA. June 2015.

Computational Matter. Talk and panel at Active Matter Summit. Cambridge, MA. April 2015.

2014   Materializing Interaction. Talk and panel at MIT Technology Review - EmTech Spain. Valencia, Spain. November 2014.

Materializing Interaction. OFFF. Mexico City, DF. August 2014.

Computational Materials. Design Terminal National Centre for Creative Industries. Budapest, Hungary. June 2014.

Scale Matters. Solid Conference. San Francisco, CA. June 2014.

SocialWare. Proximity Panel at Auto-ID Conference. Boston, MA. May 2014.

Materializing Interaction. Rhode Island School of Design. Providence, RI. April 2014.

2013   Programmable Materials. HP Research. Boise, ID. November 2013.

Hyperform. Ars Electronica. Linz, Austria. September 2013.

Materializing Interaction. MIT Technology Review - EmTech Mexico. Mexico City, Mexico. May 2013.

Materializing Interaction. Massachusetts College of Art and Design. Cambridge, USA. May 2013.

Materializing Interaction. FITC (Future. Innovation. Technology. Creativity). Toronto, Canada. April 2013.

Future Trends. Natura. São Paulo, Brazil. March 2013.

Materializing Interaction. Emily Carr University. Vancouver, Canada. February 2013.

Digital Gastronomy. Microsoft Social Computing Symposium. New York, USA. January 2013.

2012   On Interactivity, Computational Materials. Zurich University of the Arts. Zurich, Switzerland. December 2012.

BE OPEN Forum: Design for the Five Senses. Panel with Dawn Goldworm, Tuur Van Balen, Marije Vogelzang and Carter Cleveland, moderated by Jeffrey Miller at Design Miami/. Miami, USA. December 2012.

Touching Technology. TEDx Beacon Street. Cambridge, USA. November 2012.

Resolution. San Jose Tech Museum. San Jose, USA. September 2012.

Computational Materials. Keynote at Giants of Design event organized by Interior Design magazine. Palm Springs, USA. March 2012.

Computational Materials. Rede Globo. Rio de Janeiro, Brazil. January 2012.

2011   Cornucopia. 3D Printing Event. Eindhoven, Netherlands. August 2011.

The Artist as Researcher. Panel with Zach Lieberman, and Cantoni + Crescenti, moderated by Julia Kaganskiy at The Creators Project. New York City, NY. October 2011.

Materials of Interaction. Cranbrook Academy of Art. Bloomfield Hills, MI, USA. April 2011.

2010   Materials of Interaction, presented at W Hotels Design Forum. New York City, USA. December 2010.

Foodprint NYC: Feast, Famine, and Other Scenarios. Panel with Amale Andraos, Natalie Jeremijenko and Beverly Tepper, moderated by Geoff Manaughat Studio-X. New York City, USA. February 2010.

2009   Materials of Interaction. Wellesley College. Wellesley, USA. November 2009.

Materials of Interaction. Apple Inc. Cupertino, USA. August 2009.

Programming Reality. Industrial Technology Research Institute (ITRI). Taipei, Taiwan. January 2009.

2008   Materials of Interaction. Emily Carr University as part of Fall 2008 Speaker Series. Vancouver, Canada. November 2008.

2007   Design Conversations: Explorations in the Synergy of Art and Science. Fordham University. New York, USA. December 2007.

Futurecraft: Making Materials Smarter. MIT Media Lab. Cambridge, USA. September 2007.

2006   Rich Textural Interfaces and Shape Changing Architecture. CITA, Royal Academy of Fine Arts, School of Architecture. Copenhagen, Denmark. December 2006.

Soft Computation and Physical Interaction Workshop. SIGGRAPH 2006. Boston, USA. August 2006.

Soft Computation. National Research Council Canada: Industrial Materials Institute. Montreal, Canada. February 2006.

2005   Memory, Fashion, Objects and the Body: XS Labs. Bodies in Motion: Memory, Personalization, Mobility and Design, Banff New Media Institute. Banff, Canada. June 2005.

EXHIBITS

2023   Objects of AI: MIT Architecture Head Office Hallway Gallery. November 2023.

Sandcastles. SAND. Museum Sinclair-Haus, Stiftung Kunst und Natur, Bad Homburg, Germany. September 2023.

Sandcastles. This is Out of Hand: Institute of Contemporary Art. Portland, Maine. July 2023.

Silver Light. Salone Del Mobile. Milan, Italy. April 2023..

2018   Window to the Heart. Times Square. New York, NY. February 2018.

Six-Forty by Four-Eighty. Eureka! The National Children's Museum. Halifax, England. 2018.

Six-Forty by Four-Eighty. Buffalo Museum of Science. Buffalo, NY. 2018.

2017   Liquid Light. Design Miami/ with Patrick Parish Gallery. Miami, FL. December 2017.

Six-Forty by Four-Eighty. TIFF Traveling Exhibit. Canada, China, and USA. December 2017.

Silver Light. New York Silver, Then and Now. Museum of the City of New York. June 2017.

2016   Ceremony Design. Paralympics Ceremonies. Rio de Janeiro, Brazil. September 2016.

Pulp-Based Computing. National Centre for Craft & Design. Sleaford, UK. October 2016.

Six-Forty by Four-Eighty. Franklin Park Conservatory. Columbus, OH. November 2016.

Six-Forty by Four-Eighty. TIFF Traveling Exhibit. Canada, China, and USA. April 2016.

Sandcastles. High Museum of Art. Atlanta, GA. July 2016.

Hyperform. Typo en mouvement. Le Lieu du design. Paris, France. April 2016.

2015 Hive. Autodesk University. Las Vegas, NV. November 2015.

Sandcastles. Peabody Essex Museum. Salem, MA. October 2015.

Pop-Up Factory. Solid Conference. San Francisco, CA. June 2015.

Six-Forty by Four-Eighty. TIFF. Toronto, Canada. April 2015.

Metabolic - Study I. Art on the Marquee. Boston, MA. February 2015.

2014 Metabolic - Study I. Curious Sound Objects. Cambridge, MA. December 2014.

Alike. Event at Museum of Arts and Design. New York, NY. October 2014.

Alike. ANT+ Symposium. Calgary, Canada. August 2014.

2014 This is not a Ball. Netflix. June, 2014.

Sandcastles. Tel Aviv Museum of Art. Tel Aviv, Israel. March 2014.

2013 Hyperform. Prix Ars Electronica. Linz, Austria. September 2013.

Six-Forty by Four-Eighty. MOD Festival. Guadalajara, Mexico. September 2013.

Six-Forty by Four-Eighty. Burlington City Arts. Burlington, Vermont. April 2013.

2012 Reach. Cartier 5th Avenue Store. New York City, USA. November 2012.

Resolution. Permanent installation at the San Jose Tech Museum. San Jose, CA. September 2012.

Six-Forty by Four-Eighty. The Creators Project. São Paulo, Brazil. October 2012.

Six-Forty by Four-Eighty. The Creators Project. San Francisco, CA. October 2012.

2011 Six-Forty by Four-Eighty. The Creators Project. Brooklyn, NY. October 2011.

Six-Forty by Four-Eighty. Cambridge Science Center. Cambridge, UK. October 2011.

Six-Forty by Four-Eighty. Prix Ars Electronica at Offenes Kulturhaus. Linz, Austria. August 2011.

Six-Forty by Four-Eighty. Corcoran Gallery of Art as part of Washington Color and Light exhibit. Washington, DC. June 2011.

2010 Cornucopia: Digital Gastronomy. Biennale Internationale Design. Saint-Etienne, France. November 2010.

Six-Forty by Four-Eighty. Design Miami/. Miami, FL. December 2010.

Six-Forty by Four-Eighty. The Riflemaker Gallery. London, England. December 2010.

Six-Forty by Four-Eighty. MIT Museum: Luminous Windows. Cambridge, MA. November 2010.

Six-Forty by Four-Eighty. Johnson Trading Gallery: Contemporary on Chrystie. New York, NY. November 2010.

Six-Forty by Four-Eighty. Design Miami/. Basel, Switzerland. June 2010.

Cornucopia: Digital Gastronomy. DHUB Museum. Barcelona, Spain. May 2010.

2009 Shutters. Ars Electronica. Linz, Austria. September 2009.

Pulp-Based Computing. ACM SIGCHI 2009. Boston, MA. April 2009.

Dinnerware. ACM SIGCHI 2009. Boston, MA. April 2009.

2008 Skorpions: kinetic dresses. Seamless 2008 Unravel Fashion Show. Boston, MA. January 2008.

2007 Shutters. SIGGRAPH 2007 Unravel Fashion Show. San Diego, CA. August 2007.

Shutters. Collision Collective 11. Cambridge, MA. April 2007.

2006 Kukkia. Sartorial Flux at A+D Gallery. Chicago, IL, USA. September 2006.

Kukkia. Unravel: The SIGGRAPH 2006 Fashion Show. Boston, MA. July 2006.

2005 Kukkia and Vilkas. Research Material Sense exhibit at the Dutch Design Week. Eindhoven, Netherlands. October 2005.

2004 Spacehogs. VAV Gallery. Montreal, Canada. June 2004.

PurePlay. Digifest Exhibit 2004 at the Design Exchange. Toronto, Canada. May 2004.

2003 Art-O-Meter. Société des arts technologiques (SAT). Montreal, Canada. May 2003.

Locale( ). Galerie Séquence. Chicoutimi, Canada. August 2003.

The Vigil. Studio 303. Montreal, Canada. March 2003.

AWARDS

Fast Company: The best product design of 2023. Form Auto: Automation Ecosystem. 2023.

Core77 Design Awards. Fuse 1 3D Printing Ecosystem. Commercial Equipment Category. 2021.

AIGA Award. 50 Books | 50 Covers competition of AIGA: the Professional Association for Design. 2020.

Webby. Interactive Tour of Form 3 3D Printer. Webby Honoree in Websites: Best User Experience. 2020.

Fast Company. Formlabs 3D Printing Ecosystem. Honorable Mention in User Experience. 2019.

Red Dot Awards. Product Design. 2017.

Winner of the 2018 Times Square Valentine Heart Design, 2018.

VIDA 16.0 Award. Fundación Telefónica, 2015.

Core 77 Design Awards Winner, 2014.

Prix Ars Electronica – The Next Idea Voestalpine Art and Technology Award, 2013.

Finalist at Cannes Lions – Buddy Cup, 2013.

I.D. Magazine Annual Design Review – Honorable Mention, Interactive Category, 2011.

Prix Ars Electronica – Honorary Mention – Interactive Art, 2011.

Design Miami/ Designer of the Future Award, 2010.

Best Video Golden Mouse Award – CHI 2009.

PATENTS

Dynamic biological and chemical sensor interfaces. US20170071536A1. Logicink Corp.

Communication using programmable materials. US US20170325737A1. Logicink Corp.

Electronically Enabled In-Person Social Networking. US14567378. Marcelo Coelho Studio, LLC.

Touchpad with Force Sensors and Actuator Feedback. US20110141052 A1. Apple, Inc.

Content Presentation and Interaction Across Multiple Displays. US20140068520 A1. Apple, Inc.