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Active interdisciplinary researcher with 10+ years of experience in creative research disciplines. Specializing in immersive media with advanced degrees in human computer interaction and interactive media art.

## Education

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### Massachusetts Institute of Technology

Masters of Media Arts & Sciences, MIT Media Lab, 2024 (expected)

### Carnegie Mellon University

Masters of Fine Arts, focusing on Virtual Reality & Robotics, School of Fine Arts, 2016

### Rutgers University

Bachelor of Arts, Cognitive Science, Visual Art, Literature, 2011

## Publications

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1. **Pillis, D.\***, Pataranutaporn, P.\*, Maes, P., Sra, Misha, (2024). AI comes out of the closet: Using AI-Generated Virtual Characters to Help Individuals Practice LGBTQIA+ Advocacy *in* ACM Conference on Intelligent User Interfaces, accepted March 2024
2. **Pillis, D.\***, Pataranutaporn, P.\*, Maes, P., Sra, Misha, (2024). AI Theatre: Interactive Conversational Interfaces with Virtual Agents Can Increase Confidence and Self-Efficacy in Devising Solutions for Interpersonal Conflict Scenarios in CHI Conference on Human Factors in Computing Systems (Currently under revise & resubmission process \*Upon Publication, author list will be: Pataranutaporn, P.\*, Pillis, D.\*)
3. Ishii, H., Pataranutaporn, P.\*, **Pillis, D.\***, Xiao, X., Algargoosh, A., Li, L., Labrune, JB., (2024) TeleAbsence: Visions of Afterlife Telepresence, in CHI Conference on Human Factors in Computing Systems (Currently under revise & resubmission process)
4. Ishii, H. , Kilic Afsar, O., Babatain, W. , Fang, C., Forman. J, Nicita, S., **Pillis, D.**, Yang, L., Labrune, J.B., (2023). Human-Material Interaction for Expression, Performance, and Remembering, CHI Workshop 2023

\* Equally Contributing Authors

## Academic Experience

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2022 – Current

### Massachusetts Institute of Technology

*Research Associate, MIT Media Lab*

- Human Computer Interaction researcher creating prototypes of tangible user experiences evaluated in user studies
- Created first prototypes of pneumatic interactive tablets for differently abled individuals to interact with computing
- Developing AR/VR and interactive simulations to assist in ideating tangible input technologies
- Poured silicon, 3D printed templates, worked with liquid metal actuators
- Developing workflows for three dimensional capture and interactive simulations

2023

### Academy Software Foundation

*Graduate Intern, supervised by Wan Chun Alex Ma*

- Developed project overseen by Industrial Light & Magic and Meta researchers to demonstrate applications of generative AI for virtual production
- Used GPT and ThreeJs and Javascript to create motion capture driven interactive simulation for online study
- Published results of summer research in ACM Intelligent User Interfaces Conference.

2022

### MIT DesignX

*Founder, SoftDesk*

- Successfully received seed funding for startup focused on creating tangible interfaces for differently abled people
- Led team of four Harvard Graduate School of Design collaborators
- Pitched project presentations in front of hundreds of venture capitalists

2020 – 2021

### Princeton University

*Associate Professional Specialist/Visiting Instructor*

- Virtual reality specialist, developed and assisted instruction for remote courses on art & technology; including creative coding, 3D animation, robotics programming, and VR/AR/MR project development workflows
- Developed virtual learning environments for Zoom based courses, including a virtual simulation of the Princeton Art Museum, as well as 360° streaming video of remote dance performances and in-class technology demonstrations
- Managed and prepared technology kits for course support, including “Immersive Media Kits”, mini-PC’s outfitted to support advanced Unity development, & XR research

2018 – 2020

**The Institute for Creativity, Art, and Technology, Virginia Tech**

*Research Assistant Professor in Immersive Environments*

- Grant-funded researcher and creative technologist responsible for leading collaborations between faculty across art, engineering, and the sciences
- Project lead in one-of-a-kind \$15M immersive environment facility, “The Cube”, a VR research lab equipped with 150 spatially located audio speakers, 32 Qualisys motion capture cameras, and immersive 360° video projection environments
- Hardware expert and consultant for VR/AR technology, including Oculus Rift, Quest, HTC Vive, & Hololens, as well as multimedia workflows for immersive video projection mapping
- Instructed Honors courses on Unity development, open to all majors, incorporating animation, motion capture, VR/MR/AR and experimental projection mapping for storytelling or industrial prototyping

2018 – Present

**ACM SIGGRAPH International Conference**

*SIGGRAPH Diversity & Inclusivity Committee*

- Collaborate with industry peers to cultivate diversity, equity and inclusivity in computer graphics and interactive technology
- Plan panels, presentations and conference content, engaging audiences in issues relating to gender theory, critical race theory, queer studies, intersectionality, disability studies and related topics
- Host and contribute to annual “Diversity & Inclusion Summits”, encouraging conversations about best practices for cultivating inclusive cultures in the XR, VR, animation, interactive graphics and CGI industries

2018

**Gujarat Science Center, Ahmedabad, India**

*Robotics Education Consultant*

- Visiting consultant for Robotics Museum in development at the Gujarat Science Center
- Collaborated with design firms, officials from the India Government, and robotics programmers for interactive exhibit design
- Consulted on the development and creation of robotics/science exhibits
- Directed and oversaw project development of VR and AR prototypes for exhibit prototypes

2018

**Innovation Media Research Center, University of Maine**

*Researcher-in-Residence*

- Presented demos for a course titled *Artificial Intelligence and Art*, co-taught with Dr. Sofian Audry, using SoftBank's “Nao” Robot and the Oculus Rift
- Presented lectures on creating interactive Unity applications with ARKit for IOS applications
- Visited and consulted graduate students, and consulted on the development of a Virtual Reality Lab in development

2016 – 18

**School of Computer Science, Carnegie Mellon University**

*Research Associate, The Robotics Institute*

- Artist-in-Residence in Dr. Christopher Atkeson’s soft robotics laboratory
- Developed interactive robotics virtual reality projects for HTC Vive
- Archived and organized robotics collection using new media techniques
- Managed “Robot Museum”, a physical collection of robots
- Created video tutorials and animations for programming and robotics education

- Proposal accepted for presentation of an overview of our work at iRos Robotics conference, Vancouver B.C.

2015 – 16

**Posner Center Rare Book Collection, Carnegie Mellon University**

*Curatorial Fellow*

- Collaborated with noted computer scientist Ivan Sutherland to tell the story of the invention of the first virtual reality headset, coded and developed VR application
- Developed digital humanities research overlapping the fields of computer science, computer graphics and automata
- Curated large scale exhibit with rare books, robotics, and embedded interactive virtual reality experience, printed images, text, edited and designed documents
- Coordinated invited lectures of Boston Dynamic's Marc Raibert and Dr. Ivan Sutherland, jointly hosted by the School of Art and the Robotics Institute

2013 – 16

**School of Art/School of Computer Science, Carnegie Mellon University**

*Graduate Research Assistant*

- Learned and developed workflows with new technologies to assist faculty with teaching animation
- Instructed on the use of motion capture facilities, capture, rigging and re-targeting motion capture data
- Taught storyboarding, video editing, 3D modeling and Maya, Blender and ZBrush animation workflows
- Aided in students development of advanced technical skills, like cloth simulations, render layers & character rigging, as well as smoke, fire, and physics simulations

2015

**David Zwirner Gallery, New York, NY**

*Gallery Educator*

- Education and outreach for exhibition on "Light and Space" artist De Wain Valentine
- Discuss and present on works to the public including collectors, visiting researchers and critics

**Professional Experience**

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Virtual Reality Developer, Federico Solmi Studio, New York, NY, 2017

Virtual Reality Consultant, Artsy, New York, NY, 2016

Theatre Assistant Technician, The Wooster Group, Performing Garage, New York, NY, 2016

Artist's Assistant, Skowhegan Residency, Maine, 2014

Digital Archivist, Elizabeth Dee Gallery, New York, NY, 2011-13

**Teaching**

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2023

*Tangible Interfaces*, Fall 2023, Graduate Assistant, Massachusetts Institute of Technology, Media Lab, Cambridge, MA

*MAS.S61: The Metaverse: What, How, Why, and When*, Spring 2023, Graduate Assistant, Massachusetts Institute of Technology, Media Lab, Cambridge, MA

- 2021 *Transformations in Engineering & the Arts*, Spring 2021, Princeton University, Princeton, NJ
- 2020 *Technology & Storytelling for Performance*, Teaching Assistant, Fall 2020, Princeton University, Princeton, NJ
- 2019 *UH 3004: Immersive Virtual Environments for Art, Data, and Research*, Virginia Tech, Honors College, Blacksburg, VA
- 2016 *Animation, Art & Technology*, Spring 2016, Teaching Assistant, Dr. Jessica Hodgins & James Duesing, Carnegie Mellon University, Pittsburgh, PA
- 2015 *Technical Character Animation*, Fall 2015, Teaching Assistant, Assistant Prof. Spencer Diaz, Carnegie Mellon University, Pittsburgh, PA
- 2014 *Experimental Animation*, Spring 2014, Teaching Assistant, Professor Jessica Hodgins (C.S.), Professor James Duesing (Art), Carnegie Mellon University, Pittsburgh, PA  
*Foundations Concept Studio; Space and Time*, Fall 2014, Teaching Assistant, Visiting Prof. Jonathan Armistead, Carnegie Mellon University, Pittsburgh, PA
- 2013 *Electronic Media Studio: Animation & Video*, Spring 2014, Teaching Assistant, Prof. Paolo Pederecini, Carnegie Mellon University, Pittsburgh, PA
- 2016 Visiting Critic, Senior Studio, **Carnegie Mellon University**, Pittsburgh, PA  
Visiting Lecturer, Six X Eight Artist Lecture Series, **Silver Eye Center for Photography**, Pittsburgh, PA
- 2015 Committee Member, Open Engagement, **Public Arts Project Selection**, Pittsburgh, PA  
Undergraduate Review Committee, **Carnegie Mellon University**

## Media Coverage

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- 2022 MIT News, *Communicating Across Time*, by Ken Schulman.
- 2021 Pittsburgh City Paper, *CMU launches Project showcasing the History of Robotics at the University*, by Lauryn Nania.  
NEXTPittsburgh, *Robotics Project traces the roots of today's robots to CMU*, by Michael Machosky  
Ground Truth, *Carnegie Mellon University Launches The Robotics Project to Preserve and Promote the Field's Legacy*, by GT Staff.  
TribLive, *Carnegie Mellon's Robotics Project aims to preserve History of Robotics with large-scale Archive*, by Julia Felton.  
Pittsburgh Post Gazette, *From trading cards to 'cannibalized' robotic parts, CMU embarks on a mission to archive the Robotics Field*, by Lauren Rosenblatt.
- 2020 Virginia Tech News, *The Sound of Plants Dancing*, Max Esterhuizen.  
The Virginian Pilot, *Virginia researchers are studying 'the sound of plants dancing' to better the future of agriculture*, By Katherine Hafner
- 2017 Vice, Creators Project, *An Artist built an exact replica of Artificial Intelligence's Birthplace*, by Sean Neumann.

Digital Trends, *Artist re-creates the birthplace of Artificial Intelligence*, by Dyllan Furness

2016

Atlas Obscura, *Where Should Robots Go When They Retire?*, by Sarah Laskow.  
iProgrammer, *Sutherland's Trojan Cockroach On Show*, by David Conrad.

2015

Pittsburgh City Paper, *The Year in Visual Art* by Robert Raczka.

2014

The Warhol Blog, *Andy Warhola's Living Room*  
Pittsburgh Post Gazette, *Grandma's belongings live as art installation in Lawrenceville*,  
by Donna Nelson-Jones.

## Exhibitions

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2023

*Design for the Future*, MIT Media Lab, Massachusetts Institute of Technology,  
Cambridge, MA  
*Media Lab Gender Bender*, MIT Media Lab, Massachusetts Institute of Technology,  
Cambridge, MA

2020

*Virtual Princeton Art Museum Exhibit*, online virtual experience of Princeton University  
Art Collections  
*Federico Solmi: The Bacchanalian Ones*, Rowan University, NJ (Freelance VR  
Developer)

2019

*Boo Box: VR installation*, New Orleans Film Festival, Cinema Reset VR Exhibit,  
curated by Rachel Lin Weaver, New Orleans, LA  
Index Art Center, *New & Improved*, Group Exhibit curated by Sophie Sobers, Newark,  
NJ  
*Dancing Plants*, Science Festival, The Institute for Creativity, Art, and Technology,  
Virginia Tech, Blacksburg VA  
*Visual Language of Chromatin Architecture*, ICAT Day, The Institute for Creativity, Art,  
and Technology, Virginia Tech, Blacksburg VA  
Curator, *Open at the Source*, Exhibit on the intersection between Art & Science, The  
Institute for Creativity, Art, and Technology, Virginia Tech, Blacksburg VA

2018

*History of Computer Graphics*, Interactive Animation, SIGGRAPH Art Gallery,  
Vancouver, Canada  
*The Blue Plate*, University of Mary Washington, Fredericksburg, VA  
*Mainframe*, Mint Museum, Charlotte, NC

2017

*Robot Museum*, Interstate Projects, Brooklyn, NY  
*Et Tu, Art Brute?* Andrew Edlin Gallery, New York, NY

2016

*Grandmother's House*, Space Gallery, Pittsburgh, PA  
*Virtual Newell/Simon Simulation*, Miller Gallery, Carnegie Mellon MFA Thesis Show,  
Pittsburgh, PA  
*Ivan Sutherland's Trojan Cockroach*, Posner Center, Carnegie Mellon, Pittsburgh, PA

2015

*Grandmother's House*, Little Berlin, Philadelphia, PA  
*An Evening with Cara Benedetto*, Performance, Museum of Contemporary Art,  
Cleveland, OH  
*The Blue Plate: History of Computer Graphics*, Carnegie Mellon University, Pittsburgh,  
PA

*Intergalactic Immigration Office*, curated by Jen Delos Reyes, Open Engagement 2015, Pittsburgh, PA

2014 *Andy Warhola's Living Room*, The Warhol Museum, Pittsburgh, PA  
*City of Lost Men*, Kresge Theatre, Carnegie Mellon University, Pittsburgh, PA

2013 *Grandmothers House*, 4022 Woolslayer Way, Pittsburgh, PA  
*Digital Archive 2011-2013*, curated by Rebecca Jampol, Newark Penn Station, Newark, NJ

2012 *Queer Profiles in Courage*, curated by Christopher Mitchell, Leslie/Lohman Museum of Gay & Lesbian Art, NY, NY

2010 *Mix23 NYC Experimental LGBTQ Film Festival*, Theatre for the New City, NY, NY

2009 *Last Days of the Iron Maiden*, Gallery Aferro, Newark, NJ  
*Mason Gross BFA*, Rutgers University, New Brunswick, NJ  
*One City*, Jajo Gallery, Newark, NJ  
*Multiformity: The Art of Disease* curated by Deana Haggag, Jajo Gallery, Newark, NJ

## Talks & Presentations

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2023 Invited Speaker, **SIGGRAPH International Conference**, Los Angeles CA  
Invited Speaker, *AR/VR Hackathon*, **Harvard University**, Cambridge MA

2022 *Digital IDEAS Summer Institute*, **University of Michigan**. Conference on Adaptive Technology, Ann Arbor, Michigan

2021 Invited Speaker, **High-Performance Graphics Conference**, DEI Panel Discussion  
Diversity, Equity & Inclusion Volunteer, **SIGGRAPH 2021**  
SIGGRAPH LGBTQ+ Meetup, *Augmented Reality Drag Show* using AR via Zoom,  
**ACM SIGGRAPH International Conference**  
Invited Speaker, **Princeton ResInDe Virtual Conference**, IDEA: Inclusion, Diversity, Equity, and Accessibility, **Princeton University**

2020 *Living at the Intersection* Symposium, **Princeton University**, Animation collaboration with musician Bora Yoon

2019 Visiting Lecture, **UCLA Digital Media Arts**, Summer Course, invited by Miles Peyton  
Visiting Lecture, *Imitation of Life*, Virtual Reality Workshop, **Cooper Union**, New York, NY, invited by Joao Enxuto  
Invited Lecture, *Gender Representation in Computer Graphics*, **SIGGRAPH Asia**, Brisbane, Australia  
Panel member & organizer, *Rendering Gender*, with Jacob Gaboury & Bo Ruberg, **SIGGRAPH Conference**, Los Angeles, CA

2018 Organizer, Diversity and Inclusion Summit, **SIGGRAPH Conference**, Vancouver, BC  
Invited Lecture, *Robotics and the History of the Humanoid*, Lecture, **University of Maine IMRC**, Orono, MN  
Invited Lecture, *Introduction to Augmented Reality using ARKit*, Workshop, **University of Maine IMRC**, Orono, MN

Visiting Lecturer, Artificial Intelligence and Art, with Prof. Sofian Audry, **University of Maine IMRC**, Orono, MN

2017

Invited Lecture, *Towards an Artist in the Lab Framework*, **iRos Robotics Conference**, Workshop, Vancouver, BC

Science Educator, with Dr. Chris Atkeson, Robotics Institute, **Carnegie Mellon University**, Pittsburgh PA

Visiting Lecturer, *Figure Drawing for Humanoid Robots*, **Columbia University School of the Arts**, New York, NY

Visiting Critic, Physical Computing, **Carnegie Mellon University**, Pittsburgh, PA

2016

Visiting Critic, Senior Studio, **Carnegie Mellon University**, Pittsburgh, PA

Visiting Lecturer, Six X Eight Artist Lecture Series, **Silver Eye Center for Photography**, Pittsburgh, PA

2015

Committee Member, *Open Engagement*, **Public Arts Project Selection**, Pittsburgh, PA

Undergraduate Review Committee, **Carnegie Mellon University**

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## Grants and Scholarships

2018

ICAT Major SEAD Grant, *Dancing Plants*, Virginia Tech

ICAT Sead Grant, *Visual Language of Chromatin Architecture*, Virginia Tech

Steelcase Education Grant, Virginia Tech

2016

Innovation with Impact, Graduate Research Grant, Carnegie Mellon University

*Rembacher Chamber Music Award*, Carnegie Mellon University

2015

Studio for Creative Inquiry Grant, Carnegie Mellon University

Full Tuition Merit Based Scholarship, Carnegie Mellon University

2014

Public Art Scholarship, Rutgers University

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## Professional Affiliations

Special Interest Group on Computer Graphics and Interactive Techniques, SIGGRAPH Association for Computing Machinery

## Advising

Nikita Shokhov, *Mixed Reality Independent Study*, with Aisling Kelliher, Masters in Creative Technologies, School of Visual Arts, Virginia Tech

Mark Manual, Master's Thesis, Department of Computer Science, Virginia Tech

Yao Xiao, Advisor, Department of Computer Science, Master of Science, Virginia Tech

## Technical Qualifications

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### Software

Unity                      Blender                      Unreal                      Adobe Suite

Autodesk Software    Maya                      ZBrush                      Azure Kinect

### Hardware



Oculus Quest 1&2	Hololens	Leap Motion	Computer Vision
Magic Leap			

### General Skills

Ubuntu	3D Printing	HTC Vive	Microcomputers
Windows 11	Mac OS	C#	Python
Networking	Project Planning	Asset Management	Motion Capture

### Residencies

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2021	Media Archaeology Lab, the University of Colorado at Boulder (Forthcoming)
2018	University of Maine, Innovative Media, Research and Commercialization Center
	Researcher in Residence, Orono, ME
2017	Interstate Projects, Brooklyn, NYC, NY
2016	The Robotics Institute, Carnegie Mellon University Pittsburgh, PA

### Service

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Mentor for 2024 Harvard Graduate School of Design Conflux Residency Program, January 2024  
Mentor for MIT Reality Hack