

Daniel Pillis



Massachusetts
Institute of
Technology



Carnegie Mellon

pillis@media.mit.edu
<https://dpillis.com>
<https://www.linkedin.com/in/pillis/>

Daniel Pillis is an active interdisciplinary researcher and educator. He holds an MFA from Carnegie Mellon University where he worked with Ivan Sutherland, historical figure in computer graphics, & Dr. Jessica Hodgins, previous director of Disney Research, Meta Reality Labs Research and current director of Boston Dynamics AI Institute. Pillis has held previous posts as a research assistant at the CMU Robotics Institute and as a Research Assistant Professor of Immersive Environments at the Institute for Creativity, Art & Technology.

Education

Massachusetts Institute of Technology

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

Carnegie Mellon University

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

Rutgers University

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

Pillis, D.*, Pataranutaporn, P.*, Maes, P., Sra, Misha, (2023). 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

Pillis, D.*, Pataranutaporn, P.*, Maes, P., Sra, Misha, (2023). 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.*)

Ishii, H., Pataranutaporn, P.*, **Pillis, D.***, Xiao, X., Algargoosh, A., Li, L., Labrune, JB., (2023) TeleAbsence: Visions of Afterlife Telepresence, in CHI Conference on Human Factors in Computing Systems (Currently under revise & resubmission process)

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

Selected Academic Experience

2022- Current

Massachusetts Institute of Technology

Research Associate, MIT Media Lab

- Researcher in Hiroshi Ishii's Tangible Media Group
- Developing novel interactive mediums for tangible user experiences
- Draft and collaborate on publications, interdisciplinary media, and research presentations
- Developing AR/VR and interactive simulations to assist in ideating tangible input technologies

2023

Academy Software Foundation

Advised by Wan Chun Alex Ma, Meta & former TikTok Researcher

- Developed collaborative project overseen by Industrial Light & Magic and Meta researchers
- Used GPT and ThreeJs and Javascript to create motion capture driven avateering project
- Created interactive simulation for online study
- Published results of summer research in ACM Intelligent User Interfaces Conference

2022

MIT DesignX

Founder, SoftDesk

Advised by Wan Chun Alex Ma, Meta & former TikTok Researcher

- 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

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

Talks & Presentations

- 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**

Selected Press

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

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

Teaching

2023	<i>Tangible Interfaces</i> , Fall 2023, Graduate Assistant, Massachusetts Institute of Technology, Media Lab, Cambridge, MA
	<i>MAS.S61: The Metaverse: What, How, Why, and When</i> , Spring 2023, Graduate Assistant, Massachusetts Institute of Technology, Media Lab, Cambridge, MA
2021	<i>Transformations in Engineering & the Arts</i> , Spring 2021, Princeton University, Princeton, NJ
2020	<i>Technology & Storytelling for Performance</i> , Teaching Assistant, Fall 2020, Princeton University, Princeton, NJ
2019	<i>UH 3004: Immersive Virtual Environments for Art, Data, and Research</i> , Virginia Tech, Honors College, Blacksburg, VA
2016	<i>Animation, Art & Technology</i> , Spring 2016, Teaching Assistant, Dr. Jessica Hodgins & James Duesing, Carnegie Mellon University, Pittsburgh, PA
2015	<i>Technical Character Animation</i> , Fall 2015, Teaching Assistant, Assistant Prof. Spencer Diaz, Carnegie Mellon University, Pittsburgh, PA
2014	<i>Experimental Animation</i> , Spring 2014, Teaching Assistant, Professor Jessica Hodgins (C.S.), Professor James Duesing (Art), Carnegie Mellon University, Pittsburgh, PA
	<i>Foundations Concept Studio; Space and Time</i> , Fall 2014, Teaching Assistant, Visiting Prof. Jonathan Armistead, Carnegie Mellon University, Pittsburgh, PA
2013	<i>Electronic Media Studio: Animation & Video</i> , Spring 2014, Teaching Assistant, Prof. Paolo Pederecini, Carnegie Mellon University, Pittsburgh, PA

Grants and Scholarships

2018	ICAT Major SEAD Grant, <i>Dancing Plants</i> , Virginia Tech ICAT Seed Grant, <i>Visual Language of Chromatin Architecture</i> , Virginia Tech Steelcase Education Grant, Virginia Tech
2016	Innovation with Impact, Graduate Research Grant, Carnegie Mellon University <i>Rembacher Chamber Music Award</i> , 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

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

Software

Unity	ZBrush	C#	Python
Maya, Autodesk Software	Adobe Suite	Blender	Unreal

Hardware

Hololens	Oculus Quest 1&2	HTC Vive
Magic Leap	Kinect Azure	Microcomputers
3D Printing	Leap Motion	

General Skills

Windows 11	Mac OS	Ubuntu
Programming	Networking	Computer Vision
Project Planning	Asset Management	

Residencies

2021 (Forthcoming)	Media Archaeology Lab, the University of Colorado at Boulder
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

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

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