

# EMIL POLYAK

## Curriculum Vitae

Assistant Professor

Program Director of the Master of Science in Digital Media program

Antoinette Westphal College of Media Arts & Design, Drexel University,

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### EDUCATION

- 2014 Master's degree, University of New South Wales. Sydney, Australia.  
Cross-Disciplinary Art and Design.
- 2003 Associate of Arts, Media Design School. Auckland, New Zealand.  
3D Computer Animation.
- 1993 Associate of Science, Pataky Istvan. Budapest, Hungary  
Telecommunication Technology.

### ACADEMIC EXPERIENCE

- 2019–present Drexel University, Assistant Professor (Tenure track).
- 2014–2019 North Carolina State University, Assistant Professor (Tenure track).
- 2009–2014 New York University, Tisch School of the Arts Asia,  
Assistant Arts Professor.
- 2014–2014 Nanyang Polytechnic Singapore, Visiting Professor.
- 2007–2009 Media Design School, Department Head / Lecturer.
- 2004–2007 Lifeway College, Department Head / Lecturer.

### PROFESSIONAL EXPERIENCE

- 2014–present Freelance projects (United States).
- 2011–2014 Interactive developer for special projects. Earth Observatory of  
Singapore and Nanyang Technological University, (Singapore).
- 2010 Visual effects artist for "Mediation", (Singapore).
- 2010 Consultant, Artificial Life Source Ltd, (Singapore).
- 2009 Lead animator and technical director, BrandSpank Ltd,  
Auckland (New Zealand).
- 2004–2008 Technical director, Yukfoo Ltd, Auckland (New Zealand).
- 2007 Lead designer, Bubble Dome Llc, Auckland (New Zealand).
- 1993 – 2001 Managing director, Klodovik Ltd, Budapest (Hungary).

## PEER REVIEWED SCHOLARSHIP + CREATIVE ACTIVITIES

### PEER REVIEWED CONFERENCE PROCEEDINGS

- 2021 E. Polyak, Teaching from Home: Real-Time Technology for Remote Synchronous Course Delivery, EDULEARN21 Proceedings.
- 2021 E. Polyak, Undergraduate Research Lab: Introducing Research To Undergraduate Students During Lockdown, EDULEARN21
- 2020 E. Polyak, T. Berreth, P. Fitzgerald, Teaching and Learning Creativity: Augmented Reality Storytelling in the Multidisciplinary Classroom, EDULEARN20 Proceedings.
- 2020 T. Berreth, E. Polyak, P. Fitzgerald, Turning Stories: A Mythotrope as an Augmented Reality Education Platform, ICERI2020 Proceedings.
- 2020 Story-Go-Round: A Carousel-Based Platform for AR Storytelling. ACM SIGGRAPH 2020 Educators Forum and Groovy Graphics.
- 2019 E. Polyak, X. Zhang, S. Fisher, A Bioreactor in Virtual Reality and Video Games to Enhance the Learning Experience in Bioprocess Labs, EDULEARN19 Proceedings.
- 2017 E. Polyak, Paper Town VR, Immersive Expressions WebVR Exhibition, SIGGRAPH 2017.
- 2017 E. Polyak, X. Zhang, Stories for Science Classes: Experimental Interactive Metaphors, EDULEARN17 Proceedings.
- 2017 E. Polyak, B. Cantrell, I. Hennes, E. Parker, M. Tart, Z. Winton, Gamification of Sustainability: The Hybrid Game Design, EDULEARN17 Proceedings.
- 2016 E. Polyak, Chirp, Science of the Unseen: Digital Art Perspectives, SIGGRAPH 2016.
- 2016 E. Polyak, Learning to Play: Gamification of Sustainability, EDULEARN16 Proceedings.
- 2016 E. Polyak, Teaching and Learning Sustainability: Gamification of the "three E's", NC State, Teaching and Learning Symposium.
- 2015 E. Polyak, Teaching Code in Art and Design: Visual Thinkers Need Dimensions, NC State, Teaching and Learning Symposium.
- 2012 E. Polyak, Virtual Impersonation Using Interactive Glove Puppets, Proceedings of the 2012 SIGGRAPH.
- 2012 E. Polyak, Learning Mathematical Concepts with 3D Animation: Active Visualization of a Quaternion, ICERI2012 Proceedings.
- 2011 E. Polyak, Storytelling with Open Hardware: Interactive Animation Learning Framework, ICERI2011 Proceedings.

## PEER REVIEWED OR CURATED EXHIBITIONS, PERFORMANCES

- 2021 E.Polyak, Homeostasis, exhibition at the PASEO Festival, Taos, NM.
- 2020 E. Polyak, O. Kleiankina, "...Our Passage to the Stars",  
Performance at the College Music Society National Conference.
- 2020 E.Polyak, Homeostasis, exhibition at the ACM SIGGRAPH 2020.
- 2019 E.Polyak, D. Papp, Optimization for Radiotherapy,  
Smithsonian National Museum of American History, Washington DC.
- 2019 E. Polyak, O. Kleiankina, "...Our Passage to the Stars",  
Smithsonian National Museum of American History, Washington DC.
- 2018 E.Polyak, O. Kleiankina, "...Our Passage to the Stars",  
Sights and Sounds Concert Series, North Carolina Museum of Art.
- 2018 E. Polyak, O. Kleiankina "...Our Passage to the Stars"  
piano/visual recital live performance, Stewart Theatre, Raleigh NC.
- 2018 E. Polyak, D. Papp, Optimization for Radiotherapy,  
North Carolina Museum of Natural Sciences.
- 2018 E. Polyak, Invisible Worlds: The Leading Strand Exhibit. Raleigh, NC.
- 2018 Vocalization of Lemurs, Interactive Installation, NC State University.
- 2017 E. Polyak, Mist DJ, exhibition, Contemporary Art Museum, NC.
- 2017 E. Polyak, InLight Festival, Exhibition in public space, Richmond, VA.
- 2017 E. Polyak, T. Berreth, P. Fitzgerald, Supermoon exhibition,  
Shimmer Festival, Chapel Hill, NC.
- 2016 E. Polyak, Word Wars, Contemporary Art Museum, Raleigh, NC.

## PEER REVIEWED JOURNAL ARTICLES AND CURATED PUBLICATIONS

- 2021 E. Polyak, Homeostasis, Artistonish, Contemporary Art Magazine.
- 2021 E. Polyak, Homeostasis, DiVA "Digital, Interactive and Visual Arts",  
Society of Art and Science academic journal, JAPAN.
- 2020 E. Polyak, Mediating Public Space: Art and Technology that Goes  
Beyond the Frame Art Gallery, LEONARDO JOURNAL.
- 2020 "Story-Go-Round": Embracing Ambiguity by Integrating  
Art and Design. ACM SIGGRAPH Article.
- 2020 E. Polyak "Homeostasis" and Human Interference.  
ACM SIGGRAPH Article.
- 2019 X. Zhang, E. Polyak, A. Ehuan, J. Haskins, Incorporating  
an Interactive 360 Degree Video Game Into a University-Level  
Biomanufacturing Lab Curriculum, IJMAS JOURNAL.

## GRANTS, FUNDED, AND UNFUNDED PROJECTS

- 2021 N. Jushchyshyn, K. Martin, E. Polyak, Reflectance Transformation Imaging/Textile Collection, Freddie Reisman Faculty Scholarly and Creative Activity Award, Role: Co-PI. \$25,000.
- 2019 K. Chen, E. Polyak, Development and Assessment of a Biofeedback Integrated Virtual Reality System for Healthcare and Rehabilitation, Role: Co-PI, \$25,000.
- 2019 E. Polyak, Immersive Scholar Creative Residency, Andrew W. Mellon Foundation, \$7,000.
- 2019 E. Polyak, The Leading Strand, Interdisciplinary Exhibition, \$12,000.
- 2018 E. Polyak, Australian Safari, Educational Game, \$10,000.
- 2018 E. Polyak, Teaching and Learning Sustainability through Gamification, \$5,000.
- 2017 E. Polyak, Induction System, Interactive Narratives, and Learning Metaphors, Golden LEAF Biomanufacturing Training and Education Center, \$10,000.
- 2017 B. Watson, E. Polyak, P. Fitzgerald, M.Evans, Creating an Educational Nexus: Improving Learning with Cognitive Diversity, Role: Co-PI, NSF-Unfounded.
- 2017 N. Cosco, E. Polyak, Gardening + Gaming: Science and Math Enrichment for K-12 Children in Aftercare Programs, Role: Co-PI, NSF-Unfounded.
- 2017 C. Stevenson, E. Polyak, Food Safety Virtual Reality Outreach and Engagement, Role: Co-PI, PI: Clint Stevenson, NSF-Unfounded.
- 2016 App for gamification of Patient Engagement, Public service-related outreach project.
- 2015 Modeling Virtual Worlds for Katathym Imaginative Psychotherapy using Medical Specimens. Outreach project, unfunded.

## OPEN SOURCE SCRIPT PUBLICATIONS

QuickTime playblast 1.0.1. Number of downloads: 2088.

Extrude Length along curve 1.0.1. Number of downloads: 4100

Snap Me 1.0.0. Number of downloads: 882

CameraRig 1.0.0. Number of downloads: 2324

epCreateCamMaskHD 1.0. Number of downloads: 424

epCreateCamMask 1.0. Number of downloads: 730

## INVITED TALKS

- 2021 Pecha Kucha talk, PASEO Festival, Taos, New Mexico.
- 2021 Teaching and Learning Creativity: Augmented Reality Storytelling in the Multidisciplinary Classroom, Foundations in Art: Theory and Education Conference (SECAC).
- 2020 Drexel 3rd Annual Westphal College Research & Creative Works Showcase.
- 2019 Games in Augmented Virtuality. Talk at the East Coast Game Conference, Raleigh, NC.
- 2019 Immersive Scholar presentation at the 5th Liberact (Libraries & Interactive Technologies) Conference
- 2017 Coffee & Viz – Introduction to 3D Modeling, Talk at the Library.
- 2017 Cloth Simulations in Animation, Presentation for fashion designers. NC State University.
- 2016 Science of the Unseen: Digital Art Perspectives, Panel talk at ACM SIGGRAPH.
- 2016 Rhetoric, and Digital Media – Circuits with puppets, Talk at the Collaborations, Humanities, Art and Technology Festival, University of North Carolina, 2016.
- 2016 Playing for Credits, Casual Game Insider, Article on Board Games.
- 2016 The Art and Design of Learning to Play, Talk at the East Coast Game Conference, Raleigh, NC.
- 2016 Live 360° Video Stream via Unity Game Engine, Presentation at the East Coast Game Conference, Raleigh, NC
- 2016 The Art and Design of Scientific Sata, Talk at the Data Science Initiative Symposium, Raleigh,NC.
- 2015 Interactive Design with Physical Computing, Presentation for HASBRO Inc.
- 2015 Cross-Disciplinary Experiences, Talk at the Visual Experience Lab of NC State University.
- 2013 Virtual Puppeteering, Interactive Animation and Installation at the ArtScience Museum in Singapore.
- 2011 Learning to Model with Kinect, online article.
- 2008 Automated Panoramic Image Acquisition, online article.

## TEACHING

### COURSES TAUGHT

DREXEL 2020–2021	New Media Project (DIGM 540).
DREXEL 2019–2021	Undergraduate Research Lab (ANIM T380).
DREXEL 2020–2021	Immersive Media Workshop (DIGM T580).
DREXEL 2019–2020	Animation I (ANIM 211).
DREXEL 2019–2020	Digital Media Senior Project Studio (ANIM 491).
DREXEL 2019–2021	Digital Imaging for Animation and VFX (ANIM 110).
DREXEL 2019–2021	Advanced Lighting, (ANIM 248).
DREXEL 2019–2020	Computer Graphics II (ANIM I399).
DREXEL 2019–2020	Introduction to Production with Animation and VFX (ANIM 115).
DREXEL 2019–2021	Spatial Data Capture (ANIM 388).
DREXEL 2019–2021	Designing Interactive Artifacts (IDM T380).
NCSU 2014–2019	Coding for Animation (ADN 492–001).
NCSU 2014–2019	Digital Modeling (ADN 423–001/502–001).
NCSU 2014–2019	Visual Effects (ADN 411–003/502–005).
NCSU 2014–2019	Interactive Studio (ADN 460–001).
NCSU 2014–2019	Game Creation Studio (ADN 460–001).
NCSU 2014–2019	Digital Illustration Workshop, Design Camp.
NCSU 2014–2019	Stop Motion Animation workshop, Design Camp.
NCSU 2018	Wire+Animation workshop, NCSU Libraries.
Nanyang Polytechnic 2014	Game Story Creation.
NYU 2009–2014	2D/3D Character Production.
NYU 2009–2014	Compositing.
NYU 2009–2014	Interactive Art.
NYU 2009–2014	Introduction to 3D.
NYU 2009–2014	Digital Fabrication Studio.
NYU 2009–2014	Games of Yesterday.
MDS 2007–2009	Advanced 3D Production and Research.
Lifeway College 2004–2007	3D Animation.

## GRADUATE THESIS SUPERVISION

DREXEL 2021	Erjun Wang, "Creating an Augmented Reality Museum Experience for Cultural Heritage Using a Textile-based Capacitive Sensor as the Interactive Input".
DREXEL 2021	Abigail Stein, "Human-Computer Interaction: Exploring Creativity with a Visual Collaborative Tool".
DREXEL 2021	Lerong Sun, "Design Healing Spaces for Augmented Reality Experiences During Social Isolation".
DREXEL 2020	Schuyler Singzon, "Virtual Memory Palaces: A Discursive Design to Improve Recall in Older Adults".
NCSU 2019	Godfree Gert, "Behavior trees as a movement notation system for the animation of salsa dancing".
NCSU 2019	Connor Shipway, "Rocket builder" Educational video game for physics class.
NCSU 2019	Stephanie Huang, "Fossil Foundations" Virtual fossil preparation exhibit for museums.
NCSU 2019	Candida Hall, "Othering" A documentary installation.
NCSU 2019	Dawoda Kah, "Learning and Play" Teaching Through a Virtual Reality Game That Allows Collecting 3D Physical Artifacts.
NCSU 2018	Bhargavi Mohan, "Illumination" An animated story to raise awareness on fake gurus and godmen in India.
NCSU 2018	Rakan DiarBakerli, "The Celtic Arab" An interactive game on cross-cultural moral concepts.
NCSU 2018	Kate Juras, "Vezna: Embodying the Inner Critic; Enough is Enough" Live action puppetry.
NCSU 2017	Yu Ma, "Lotus Pond" A creative experiment to reintroduce traditional Chinese ink wash painting using virtual reality.
NCSU 2017	Jeremiah David Roberts, "Experiencing in Pieces" An audible and visual study in reactive spaces.
NCSU 2017	Jennifer Sotoamaya, "What Goes Up: Acting in Animation" Investigation of storytelling as a nonverbal narrative conveyed through acting, music, and sound.
NCSU 2015	Frank Ryan Adamek, "An Interactive Demonstration of Solar Power".
NCSU 2015	Alyssa Beatrice Barrett, "The Power of Play: Disseminating Narrative as Branded Entertainment Utilizing 3D Animation".
NCSU 2015	Elias Mauricio Clarke Campbell, "Suspension of Disbelief through Personal Struggle in Hybrid Media".
NCSU 2015	Alisa Katz, "Sharing in the Common Life: Interactive Experiences to Enhance Storytelling and Learning in Public Spaces".

## UNDERGRADUATE RESEARCH SUPERVISION

DREXEL 2021	Spencer Cohen, "Converting 3d Virtual Animation Rigs To 'Print-In-Place' Movable 3d Prints". American Association for the Advancement of Science (AAAS) 2022
DREXEL 2021	Anthony Alcancia, "Positional Tracking For Medical Applications With Augmented Reality". American Association for the Advancement of Science (AAAS) 2022
DREXEL 2020	Anjelikal Rogers, "A Concept for Procedurally Generated Narrative based on User Engagement and its Practical Applications" National Conference on Undergraduate Research 2021 Harvard University - National Collegiate Research Conference 2021
DREXEL 2020	Elliot Dickman, "Practical Applications of Strange Attractors in Generative Design" National Conference on Undergraduate Research 2021 Harvard University - National Collegiate Research Conference 2021
DREXEL 2020	Alexus Aiken, "Study of the Industry Potential of Real-Time Virtual LED Sets as Compared to Traditional Film Sets for Future VFX Professionals" National Conference on Undergraduate Research 2021 Harvard University - National Collegiate Research Conference 2021
DREXEL 2020	Stephen Abraham, "The Dawn of Real-Time Rendering Solutions: An Exploration into the Integration of Real-Time Rendering Solutions in the Pipeline for Production" National Conference on Undergraduate Research 2021 Harvard University - National Collegiate Research Conference 2021
DREXEL 2020	Maggie Plum, "Analysis on Effective Horror Movies" National Conference on Undergraduate Research (2021)



## SERVICE

DREXEL 2021–present	Program Director: Master of Science in Digital Media program.
DREXEL 2020–present	Undergraduate Applied Research Lab as co-op during COVID.
DREXEL 2021–present	Member of the Caucus Committee on Academic Affairs (CCAA).
DREXEL 2020–present	Member of the Caucus Committee on Faculty Affairs (CCFA).
DREXEL 2021–present	Member of the Graduate Programs, Lifelong Learning & Certificate Committee (GLLC).
DREXEL 2020	Outreach, free public lecture for “Bit Project”, a 501(c)(3) nonprofit providing free, hands-on learning experiences to underserved students around the world.
NCSU 2017–2019	Member of the Doctor of Design steering committee.
NCSU 2019	Member of the Art+Design curriculum undergraduate and graduate taskforce.
NCSU 2018–2019	Co–director of the graduate program in Art+Design.
NCSU 2017–2019	Member of the University Diversity Advisory Committee.
NCSU 2019	Member of the University Standing Committee on Group Insurance & Benefits.
NCSU 2018–2019	Member of the University Standing Committee on Library.
NCSU 2016–2018	Libraries Departmental Representative.
NCSU 2017–2018	Member of the Student Publication Advisory Board.
NCSU 2018	Art 2 Wear fashion show video production supervisor.
NCSU 2016–2018	Member of the Sustainability Council administrative advisory committee.
NCSU 2017–2019	Member of the Advisory Board for the Assistant, Associate, and Full Professors' Communities.

## MEMBERSHIPS

VR/AR Association (VRARA) (continuing)  
ACM SIGGRAPH Pioneer Member (continuing)  
New Media Caucus (continuing)  
College Arts Association (continuing)  
National Art Education Association (continuing)  
IBM Academic Initiative (continuing)  
Interaction Design Association (continuing)  
VR/AR Association (continuing)

## **RESEARCH AND CREATIVE INTERESTS**

Interactive design and performance in mixed reality.

Computational creativity.

Education methods in creative fields.

Cross-disciplinary art and design.

## **LANGUAGES SPOKEN**

Fluent in Hungarian, Serbian.