ANNIE KELLY

TECHNOLOGIST / ARTIST / RESEARCHER / EDUCATOR

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EDUCATION

University of Colorado Boulder

M.S. Creative Technologies and Design 12/2019
B.S. Computer Science 05/2016

EXPERIENCE

Laboratory for Playful Computation / Researcher 10/15 - *now*

Develop creative technologies and curricula to design and evaluate STEAM learning experiences and for both adolescent and adult populations.

University of Colorado Boulder / Instructor 01/20 - *now*

Teach a personally developed Digital Arts course covering graphic and web design, physical computing, and fabrication.

Microsoft Research / Research Intern 06/18 - 08/18

Developed a beginner-friendly Augmented Reality toolkit called *ARcadia* that turns real world objects into interactive musical controllers.

Freelance 2014 - now

Completed commissioned projects spanning interactive art and museum installations, mixed reality, web design, logo design, and other artwork.

SKILLS

Programming	Python, C++, C#, JavaScript, Java, C, Bash, Unity, Raspberry Pi, Arduino, IoT, machine learning
Graphic Design	Adobe Photoshop, Illustrator
Web Design	HTML/CSS, JavaScript, Node, React, p5, Web Audio
Video / Animation	After Effects, Premiere, Processing, AR/VR, hand drawn
Sound Design	Logic, Max/MSP, Supercollider, music theory
Fabrication	Laser cutting, 3D modeling, prototyping, electronics
Research	Quantitative/qualititative methods, published in several journals and conferences

PROJECTS

The Cell 2019| Interactive room-sized installation of DNA on CU campus
Heart Flush 2019| Commissioned technology for performing arts piece
ARcadia 2018| AR toolkit I developed at Microsoft Research
Universal Mind Control 2018| Brainwave powered planetarium installation
Audiovisual Playground 2018 | interactive VR music sequencing game
The Show 2018| Engineered software for interactive LED dance costumes
Metamorphosis 2018| Kinect based museum butterfly lifecycle installation
DoggyVision 2018| Augmented Reality experience of dogs' color perception
BlockyTalky 2015 | Customizable toolkit with sensors & expressive output
More projects can be found on my website.

PUBLICATIONS

Making changes: Counteracting Latina Young Women's Negative STEM Experiences through Culturally Responsive Physical Computing

Liam Fischback, Kristin Searle, R. Benjamin Shapiro, Annie Kelly, Colby Tofel-Grehl
In Proceedings of the 2020 International Conference of the Learning Sciences

"Our dog probably thinks Christmas is really boring": Re-mediating science education for feminist-oriented inquiry

Annie Kelly, Christine Chang, Christian Hill, Mary West, Mary Yoder, Joseph Polman, Shaun Kane, Michael Eisenberg, R. Benjamin Shapiro
In Proceedings of the 2020 International Conference of the Learning Sciences

Tangible and Playful Connected Learning

Sherry Hsi, Annie Kelly, Lila Finch, R. Benjamin Shapiro, Colin Dixon, Mike Petrich, & Karen Wilkinson
A workshop facilitated at the 2018 Connected Learning Summit

ARcadia: A Rapid Prototyping Platform for Real-time Tangible Interfaces

Annie Kelly, R. Benjamin Shapiro, Peli de Halleux, & Thomas Ball
In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems

BlockyTalky: New programmable tools to enable students' learning of networks

Annie Kelly, Lila Finch, Monica Bolles, & R. Benjamin Shapiro
In Proceedings of the 2018 International Journal of Child-Computer Interaction

Universal Mind Control

Annie Kelly & Monica Bolles
Presented at the 2018 IMERSA Summit in Columbus, OH

BlockyTalky: A Prototyping Toolkit for Digital Musical Interfaces

Annie Kelly, Monica Bolles, & R. Benjamin Shapiro
A workshop facilitated at the 2017 International Conference on New Interfaces for Musical Expression

Becoming Butterflies: Interactive Embodiment of the Butterfly Lifecycle

Annie Kelly, Matthew Whitlock, Stephen Voida, et al.
Poster presented at the 2017 ACM International Joint Conference on Pervasive and Ubiquitous Computing

BlockyTalky: Tangible Distributed Computer Music for Youth

R. Benjamin Shapiro, Annie Kelly, Matthew Ahrens, et al
Selected for the 2017 Computer Music Journal

Audiovisual Playground: A Music Sequencing Tool for 3D Virtual Worlds

Annie Kelly & Kristofer Klipfel
In Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems

BlockyTalky: A Physical and Distributed Computer Music Toolkit for Kids

R. Benjamin Shapiro, Annie Kelly, Matthew Ahrens, & Rebecca Fiebrink
In Proceedings of the 2016 International Conference on New Interfaces for Musical Expression

TEACHING

COURSES

Digital Media Art (LIBB 2500)
CU Boulder 2020
Course website: http://libbydigitalmedia.art/

ADULT EDUCATION

Physical Computing for Live Performance 2019
Worked with graduate students enrolled in an Advanced Composition course. Taught students to use the micro:bit to create their own performance technologies that map sensor input to output such as sound, lighting, and motion.

Stage Lighting Workshop for Novice Programmers 2019
Three hour workshop teaching musicians how to build physical interfaces that can be used in real-time to control professional stage lighting equipment.

Talking Trees Jam: Interactive Art Installations Embodying Environmental Change 2019
A weekend workshop where participants collaborated on interactive art installations that embody Colorado environmental data. Participants worked with real scientific data collected in Colorado forests and physical computing tools to bring their installations to life.

Creative++: A Creative Arts and Technology Jam 2017
A 2017 interdisciplinary design event for artists and engineers where participants worked in groups to build an interactive technology for creative expression.

YOUTH AND ADOLESCENT EDUCATION

Build your own Interactive Pet Toys and Caretaking Supplies 2018
Co-facilitated a multi-day workshop for high schooler students to design, engineer, and program interactive toys and objects for their pets.

Interactive Computer Music for Middle Schoolers 2017
Co-designed a middle school curriculum around using a physical computing toolkit to create musical controllers that use real-time input from sensors.

Interactive Physical Computing for Middle Schoolers 2017
Co-designed a middle school curriculum around using a physical computing toolkit to create games that use real-time input from sensors to control lights and actuators.

AWARDS

$10k grant from the Infosys Foundation
2019 ICER Travel Award
2015 Grace Hopper Scholar

INTERESTS

Playing bass in two Denver punk bands, painting, true crime