R A Y L C

neuro . tech . art

PROFILE

creative technology and interactive art inspired and supported by multidisciplinary understanding of human behavior.

EXHIBITION / AWARDS

2019 Ars Electronica Future Innovators grant
2019 Columbia University I-House exhibition "Technology and Social Good" curator.
2019 ICRA-X Robotic Art "Expressive Motions"
2019 "An Immersive Rohingya Experience" ArtLab Happieee Lahore, cur. A. Saeed.
2019 "Machine Gaze" exhibition. NYSCI, curator Elizabeth Slagus.
2019 Creative Tech Week art talk, cur. Draves.
2019 Critical Creative Practice keynote Northeastern Univ, curator D. Curry.
2019 A' Design Award in Social Design.
2018 "FLORA" network intelligence. Java Studios NYC, curator J. Crouse.
2018 "Artistic Intelligence" exhibition. ISCMA City University of Hong Kong.
2018 "gARment" fashion experience. NYC Media Lab '18, cur. J. Hendrix.
2018 Adobe Design Achievement award.
2018 Microsoft Imagine Cup finalist. VRbal: VR training for speech therapy.
2017 "Secret Lives of Machines" exhibition. Major Major Dimension show, Parsons.
2017 Best Presentation award. Serendicity: Verizon AI Design Jam.
2016 Falling Walls speaker, Tokyo Japan.
2015 "3rd Skin" fashion performance. Tokyo Golden Egg, curator V. Ruijters.
2014 "ダンス目なし" photo exhibit. 12th 1_Wall show, curator R. Takano.

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EDUCATION

2017 - 2019 | Parsons School of Design
Design and Technology, MFA 2019

2013 - 2017 | Tokyo MODE Gakuen (東京モード学園)
Fashion Design and Technology, MPS 2017

2000 - 2003 | University of California, Berkeley
Electrical Engineering and Computer Sciences, BS 2003

RESEARCH / DESIGN

PARSONS SCHOOL OF DESIGN | 2017 - 2019
Design: 3D poetry installation (Jess Irish), smart objects shy lamp (Carla Diana).

LOOMIA CREATOR LAB | 2017 - 2018
Design: smart textile clothing for gesture-based 3D dance environment UX.

WEILL CORNELL MEDICAL SCHOOL | 2017 - 2018
Research: wireless IR system for cortex-wide imaging behavior (Connor Liston lab).

RIKEN BRAIN SCIENCE INSTITUTE | 2013 - 2016
Research: rewards are necessary to extinguish PTSD stress (Josh Johansen lab).

UNIVERSITY OF CALIFORNIA LOS ANGELES | 2007 - 2012
Research: modeling inhibitory movement circuits in cerebellum (Tom Otis lab).

PALO ALTO RESEARCH CENTER | 2003 - 2005
Research: particle filter for predicting human motion in clutter (David Fleet lab).

UC BERKLEY GROUP FOR USER INTERFACE RESEARCH | 2002 - 2005
Design: gesture-recognition post-it wall UI/UX in web design (James Landay).

GRANTS / RESIDENCIES

2019 Davis Peace Prize: for interactive VR documentary of Rohingya refugee camps.
2019 NYSCI New York Hall of Science designer in residence: educating computer vision.
2018 Brooklyn Fashion Design Accelerator residency: Tek Tiles smart textiles design.
2018 Yahoo-Verizon Sports-Media-Tech startup grant: for 5G stadium app for AR views.
2018 Verizon Connected Futures III grant: AI-based VR for emotional training for autism.
2017 Process Space LMCC Governor's Island: gesture recognition in dance music improv.
2015 JSPS Kakenhi Wakate B grant-in-aid: (科研費若手) for young scientists 25871125.
2013 1_Wall at Guardian Garden residency: communication of dance "without eyes."
2012 BankArt Studio Yokohama residency: mirroring human implicit acts with wearables.
2011 National Science Foundation DIGSSS training grant: Suzhou Cold Spring Harbor.
2009 National Institute of Health Neural Microcircuits grant: voltage sensitive dyes UCLA.

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MEDIA

mixed media scupture
interactive installation
affective computing
interactive user design
fashion technology
nonlinear narratives

I AM NOT

just an artist, nor just a scientist, nor just a designer, nor just an engineer, despite working in each as my career. I am at the junction of human understanding, technology, and creative practice, creating sculptures and audience experiences for humans and devices that enable empathetic communication, from the multidisciplinary perspectives of neuroscience, installation art, design, and storytelling.

CURRENT TOPIC

I create human-machine environments with embedded intelligence to allow our world to talk to us, so we can empathize deeply with others and with ourselves.

CURRENT WORK

We stare at our screens and devices all the time. How do machines see us? An interactive exhibition and workshop at NYSCI explores how computer vision detects faces using a knowledge base and movement. We refurbished a supermarket security camera and souped it up with machine learning and motors to show audiences how interactions with intelligent machines in the future depends on human perception.
[Machine Gaze]

We are always talking about ourselves, thinking about ourselves, taking pictures of ourselves. Using EEG technology to illustrate our obsession about ourselves, I constructed a two-way mirror based on Moritz Wehrmann's Alter Ego installation but made it interactive based on attention signals from NeuroSky headsets. The more we talk and think about ourselves the more we see ourselves, and others see us.
[Look at Me, Think of Me]

Machines are becoming specialized and hard to understand. Instead of simplifying in the digital realm, I adapt the digital to humans by creating smart devices and spaces that evoke emotional reactions. They can be caring, flaky, trusty, nagging, attention-craving, occasionally angry, and mildly jealous. A harmonious future involves machines that are part of human ecology instead of opposing it.
[Secret Lives of Machines]

Machine Learning (ML) has been employed to extend human abilities in image and speech processing. Instead of using ML for data mining, I instead take ML agents part of human ecosystems, applying ML to unexpected forms of interactions that subvert what we think machines ought to do, creating situations where ML goes beyond human expectation of what machine intelligence should mean.
[AI: Artistic Intelligence]