

# AHNA GIRSHICK

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Lives and works in Berkeley, CA

## Group Art Exhibitions

- 2024 *Ripples*, University of California School of Law, San Francisco, CA | curator Esther Mallouh (*forthcoming*)  
*Curating AI, 120710*, Berkeley, CA | curators Joshua Bloom, Claudia Blom, Steve Lomprey  
*Doomscapes and the Digital Beyond*, ARC Gallery, Chicago, IL | curator Curtis Anthony Bozif  
*A Way of Seeing Everything & Nothing*, Ely Center of Contemporary Art, New Haven, CT | curator *Something Projects*
- 2023 *Coded Creativity: Exploring the Intersection of Art and Algorithms*, *Hera Gallery*, Wakefield, RI | curator Kate McNamara  
*Within Sight Or From Imagination*, Gearbox Gallery, Oakland, CA | curator Jeremy Morgan  
*Espirit de L'Escalier*, I Like Your Work | curator Alicia Puig
- 2022 *Mirror Material*, *Southern Exposure*, San Francisco, CA | curator *Tiger Strikes Asteroid*
- 2015 *NEAT: New Experiments in Art and Technology*, *Contemporary Jewish Museum*, San Francisco, CA
- 2014 *Digital Revolution*, *Barbican Centre*, London, UK  
*Sónar 2014*, Barcelona, Spain
- 2013 *Sónar 2013*, Barcelona, Spain  
*Zero1 Garage*, San Jose, CA  
*Sound in Space*, *The Museum of Modern Art*, New York, NY

## Education

Postdoctoral Fellow in Computer Science, University of California, Berkeley, CA, 2010-11  
Postdoctoral Fellow in Psychology and Neuroscience, New York University, NY, NY, 2007-10  
Ph.D. in Vision Science, University of California, Berkeley, CA, 2007  
M.S. in Computer Science (Cognitive Sci + Sci Comp minors), University of Minnesota, Twin Cities, MN, 1999  
B.S. in Computer Science (AI + HCI emphases), University of Minnesota, Twin Cities, MN, 1996

## Recognitions

- 2019 RE•WORK *30 Influential Women Advancing AI in 2019*
- 2014 Webby Award Honoree (for *Synthetica*, with Scott Snibbe)
- 2013 Apple's *Best App of the Year Award for Art & Music* (for *Gravilux*, with Scott Snibbe)  
Webby Award Honoree (for *REWORK\_*, with Scott Snibbe)  
*D&AD InBook Award for Digital Design* (for *REWORK\_*, with Scott Snibbe)  
ZKM App Art Award for Technical Innovation (for *Oscilloscoop*, with Scott Snibbe)
- 2009-12 *Ruth L. Kirschstein National Research Service Award* (NIH/NEI, 3-year fellowship)
- 2001-05 *Computational Sciences Graduate Fellowship* (DOE, 4-year fellowship)

## Live Performance

- 2012 Animated concert visuals for [Passion Pit](#) (with Scott Snibbe), [Webby Awards \(NY\)](#)
- 2011 Animated concert visuals for [Björk](#) (with Scott Snibbe), Bestival, UK
- Animated concert visuals with Scott Snibbe, [Pop-Up Magazine](#), San Francisco's Symphony Hall

## Published Art Apps (with Scott Snibbe)

- 2013 [METRIC Synthetica](#) for iOS, 2014 Webby Award Honoree
- 2013 [Oscilloscoop](#) for iOS & LEAP, ZKM App Art Award for Technical Innovation
- 2013 [Passion Pit Gossamer](#) for iOS
- 2012 [Gravilux](#) for MacOS & Android, Apple's Best App of the Year Award for Art & Music
- 2012 [REWORK \(Philip Glass Remixed\)](#) for iOS, Webby Award Honoree, D&AD InBook Award
- 2013 [MotionPhone](#) for iOS

## Select Press

- [30 Influential Women Advancing AI in 2019](#) RE•WORK, Dec 17, 2019.
- [Women Breaking Barriers in A.I. \[interview\]](#) *OnlineEducation*. September 2018.
- [It's Almost Impossible to Make Bad Music with this App.](#) *FastCo Design*, Dec. 9, 2013.
- [Rework \(Philip Glass Remixed\) app by Snibbe Studio.](#) *WIRED*, Dec. 13, 2012.
- [A Magical App For Exploring A Philip Glass Remix By Beck.](#) *FastCo Design*, Dec. 13, 2012.
- [Exploring Snibbe's New App Album For Philip Glass' REWORK](#) , Featuring Beck, Amon Tobin, Nosaj Thing, And More. *The Creator's Project*, Dec 13, 2012.
- [REWORK \(Philip Glass Remixed\) by Snibbe Studio.](#) *Creative Applications Network*, Dec 13, 2012.
- [Metric Release 'Synthetica' Companion Album and App.](#) *Rolling Stone*, Nov. 12, 2013.
- [Step Into an Optical Illusion.](#) *Science Friday*. Oct 12, 2012.
- [The Probabilistic Mind.](#) *Science News* feature. 180:18. Oct. 18, 2011.
- [Prior & prejudice.](#) *Nature Neuroscience* "News & Views", 14:943–945. July 26, 2011.
- [Nintendo Warns Parents Of Eye Risks In 3-D Game,](#) *National Public Radio*, January 3, 2011.
- [A Real Science of Mind,](#) *The New York Times*, December 19, 2010.
- [3-D Movies Can Induce Headaches and Sickness,](#) *The New York Times*, February 8, 2010.
- [Scientists uncover why picture perception works,](#) *Science Daily News*, September 21, 2005.

## Select Lectures & Podcast Interviews

- Mar 2022 Guest Lecture, California College of the Arts, San Francisco, CA
- Apr 2021 [LOKA](#) podcast interview of Ahna Girshick
- Mar 2021 [AI and Storytelling: Combining data science and DNA, with Dr Ahna Girshick,](#) Teens in AI Podcast
- Jan 2020 [RE•WORK Women in AI,](#) San Francisco, CA
- Nov 2018 [Open Data Science Conference,](#) San Francisco, CA
- May 2018 Rev Data Science, San Francisco, CA
- July 2015 TTI/Vanguard Innundata, Philadelphia, CA
- Oct 2013 Guest Lecture, Data Visualization course, University of San Francisco, CA
- Feb 2013 [ZERO1 Garage,](#) San Jose, CA
- Jan 2012 Intel Labs, Experience Insights Lab, Hillsboro, OR
- Sep 2010 Center for Neural Science, New York University, New York, CA
- Apr 2007 Max-Planck Institute for Biological Cybernetics, Tübingen, Germany
- Jul 2006 New York University, Department of Psychology, New York, NY
- Jun 2006 Université Paris 5, Laboratoire Psychologie de la Perception, Paris, France
- Sep 2005 Max-Planck Institute for Biological Cybernetics, Tübingen, Germany
- Aug 2005 European Conference on Visual Perception, La Coruña, Spain
- Aug 2004 European Conference on Visual Perception, Budapest, Hungary
- Jun 2000 Non-Photorealistic Rendering and Animation Conference, Annecy, France
- Aug 1999 SIGGRAPH, Los Angeles, CA

## Professional Work Experience in Vision, Data Visualization and A.I. Research

**Manager, Computational Genomics Research, AncestryDNA, San Francisco, 2016 - 2021** (*started as Research Scientist, then Senior Research Scientist*)

- Responsible for leading multi-year research vision, managing research & data scientists, projects focused on developing data-driven actionable health and ancestral origin estimations from DNA
- Innovator in applied machine learning to create personalized stories based Ancestry's unique multi-modal dataset composed of DNA, health records, family trees, historical records and images
- Delivered numerous public talks, co-inventor on multiple patents, conference presentations, papers

**Head of Product, ENLITIC, San Francisco, CA. 2014 - 2016** (*first employee, started as Senior Data Scientist*)  
*Named to MIT Tech Review's 50 Smartest Companies 2015 and 2016*

- Managed AI product using deep learning to make radiology faster, cheaper, more accessible
- Wore many hats across PR (*WSJ, New York Times, WIRED, MIT Tech Review*), client & investor pitches (raised \$15M), product development, data science, development of medical training datasets, produced a visualization shown on *CNN*

**Data Science Fellow, INSIGHT DATA SCIENCES, Palo Alto, CA. Summer 2014**

**Senior Producer, Snibbe Studio (acquired by Eyegroove then Facebook 2016), San Francisco. 2012-2013**

- Produced dozens of interactive music visualization apps with major artists including Björk, Philip Glass, Beck, Metric, Passion Pit, Feist
- Leader from artistic vision, UX to deployment; Managed team of engineers, designers & artists
- Managed cross-platform app development for iOS, Mac, Android, Windows, LEAP Motion
- Twice a Webby Award Honoree, Museum of Modern Art (NY), *WIRED, Rolling Stone, Apple's Best App of the Year*

**Computer Science Postdoctoral Fellow, UNIVERSITY OF CALIFORNIA, Berkeley, CA. 2011-2012**

- Advisors: Maneesh Agrawala (now at Stanford) and Hany Farid
- Researched optimizing human perception of data visualizations & machine learning of design styles

**Postdoctoral Fellow in Laboratory for Computational Vision, NEW YORK UNIVERSITY, New York, NY. 2008-10**

- 3-yr NIH NRSA Fellowship, published in *Nature Neuroscience*, press in *Science News, NPR, Nature*
- Behavioral experiments, image analysis, neural networks, machine learning

**Vision Science Graduate Student Researcher, UNIVERSITY OF CALIFORNIA, Berkeley, CA. 2001-2007**

- Awarded 4-yr DOE Computational Sciences Fellowship to research visual perception of displays
- Published results in *Nature Neuroscience, SIGGRAPH*, received press in *NPR and New York Times*
- Developed machine learning models of visual perception of virtual reality, 2D and 3D displays, sensory integration of multiple sources of information (stereo, perspective, focus, haptics)
- Designed & conducted human visual psychophysics experiments using C, C++, OpenGL

**Research Assistant, NISSAN CAMBRIDGE BASIC RESEARCH at M.I.T., Cambridge, MA. 1999-2001**

- Programmed car-mounted computer vision to predict road geometry for early self-driving cars
- Conducted behavioral experiments on the use of information in human reach and locomotion

**Computer Science Research Assistant, UNIVERSITY OF MINNESOTA, Minneapolis, MN. 1998-1999**

- Designed algorithm to mimic pen-and-ink style of traditional illustrators; Presented at *SIGGRAPH*.

**Data Visualization Intern, SILICON GRAPHICS (SGI) Eagan, MN. Summer 1998**

- Programmed prototypes for scientific visualization and high-performance computing (C++/OpenGL)

**Data Visualization Intern, XEROX PARC & INXIGHT SOFTWARE, Palo Alto, CA, 1997**

- User research on information visualization research prototypes (with Stuart Card & colleagues)

## Scientific Publications & Patents in Vision, AI, Data Viz, Genetics (50+ publications, nearly 5k citations)

- Knight SC, ... **AR Girshick\***, EL Hong & CA Ball. [COVID-19 susceptibility and severity risks in a cross-sectional survey of over 500 000 US adults](#). *BMJ Open* (2022) \*corresponding author
- COVID-19 Host Genetics Initiative. [A first update to mapping the human genetic architecture of COVID-19](#). *Nature* 608 E1-E10 (2022)
- AR Girshick**, L Ruiz, J Reese (2021) Photo composites. US patent application.
- G.H.L. Roberts,...**AR Girshick**, E.L. Hong, C.A. Ball, K.A. Rand. [Expanded COVID-19 phenotype definitions reveal distinct patterns of genetic association and protective effects](#). *Nature Genetics* (2022)
- Horowitz, J.E., ...**AR Girshick**, et al. [Genome-wide analysis provides genetic evidence that ACE2 influences COVID-19 risk and yields risk scores associated with severe disease](#). *Nature Genetics* (2022)
- COVID-19 Host Genetics Initiative. [Mapping the human genetic architecture of COVID-19](#). *Nature* 600 472-7 (2021)
- Anderson, **AR Girshick**, RE Curtis, B Wilson, DA Turissini. (2022) Characterizing heterogeneity with fine-scale population structure. US patent.
- Roberts, GHL...**AR Girshick**, KA Rand, EL Hong & CA Ball. (2020) [AncestryDNA COVID-19 host genetic study identifies three novel loci](#). *medRxiv*. 2020.10.06.2020586.
- AR Girshick** et al (2019) Estimation of phenotypes using DNA, pedigree, and historical data. US patent application.
- RE Curtis, **AR Girshick**, AH Anderson (2019) Filtering genetic networks to discover populations of interest. US patent application.
- Zhang, M, JM Granka, THL Nguyen, **AR Girshick**, H Arbel (2019). Phenotype trait prediction with threshold polygenic risk score. US patent application.
- Curtis, RE, **AR Girshick**. [Estimation of Recent Ancestral Origins of Individuals on a Large Scale](#). *Proc Int'l Conf on Knowledge Discovery and Data Mining (KDD)*. (2017) **[VIDEO] Selected for a talk**.
- Girshick, AR**, MS Landy, EP Simoncelli. [Cardinal rules: visual orientation perception reflects knowledge of environmental statistics](#). *Nature Neuroscience*, 14:926-932. (2011) **Received press in Science News, NPR, Nature and 600+ citations**.
- Burge, J, **AR Girshick**, MS Banks. [Visual-haptic adaptation in the absence of feedback is determined by relative reliability](#). *Journal of Neuroscience*, 30(22): 7714-21. (2010)
- Girshick, AR**, MS Banks. [Probabilistic combination of disparity and texture slant information: weighted averaging and robust estimation as optimal percepts](#). *Journal of Vision*, 9(9):8. 1-20. (2009)
- Banks, MS, R Held, **AR Girshick**. [Perception of 3-D layout in stereo displays](#). *Information Display*, (2009)
- Hoffman, DM, **AR Girshick**, K Akeley, MS Banks. [Vergence-accommodation conflicts hinder visual performance and cause visual fatigue](#). *Journal of Vision*, 8(3):33.(2008) **Received 2k citations**.
- Banks, MS, K Akeley, DM Hoffman, **AR Girshick**. [Consequences of incorrect focus cues in stereo displays](#). *Information Display*, 24(7), 10-4. (2008)
- Vishwanath, D, **AR Girshick**, MS Banks. [Why pictures look right when viewed from the wrong place](#). *Nature Neuroscience*, 8(10), 1401-10. (2005)
- Watt, SJ, K Akeley, **AR Girshick**, MS Banks. [Achieving near-correct focus cues in a 3-D display using multiple image planes](#). *Proc. SPIE: Human Vision & Electronic Imaging*. (2005)
- Banks, MS, HF Rose, D Vishwanath, **AR Girshick**. [Where should you sit to watch a movie?](#) *Proc. SPIE: Human Vision and Electronic Imaging*. (2005)
- Girshick, AR**. The psychology of art and the evolution of the conscious brain by Robert L. Solso (MIT Press). *Pattern Analysis & Applications*, 8(3), 256-7. (2005). Invited book review.
- Akeley, K, SJ Watt, **AR Girshick**, MS Banks. [A stereo display prototype with multiple focal distances](#). (SIGGRAPH) *ACM Transactions on Graphics*, 23(3), 804-11. (2004). Received nearly 400 citations.
- Girshick, AR**, V Interrante, S Haker, T Lemoine. [Line direction matters: An argument for the use of principal directions in 3D line drawings](#). *ACM Non Photorealistic Animation & Rendering*. (2000)
- Boer, ER, **AR Girshick**, T Yamamura, N Kuge. [Experiencing the Same Road Twice: A Driver-Centered Comparison between Simulation and Reality](#). *Proc. Driving Simulation Conference*, 33-55. (2000) **Early work on self-driving cars**.
- Girshick, AR**, V Interrante. [Real-time principal direction line drawings of arbitrary 3D surfaces](#). *Computer Graphics Visual Proceedings (SIGGRAPH)*, 271. (1999)