IN REAL LIFE

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EDUCATION GUIDE

Maija Tammi, *One of Them Is a Human*, 2017

MoCP Museum of Contemporary Photography | **Columbia** COLLEGE CHICAGO

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INTRODUCTION

As the powerful technology behind artificial intelligence grows more sophisticated, machines have developed the capacity to not only capture images but to "see" them as well. *In Real Life* is an exhibition seeking to examine the real-world impact of computer vision—from the murky ethics of data collection and surveillance to the racial and gender biases that abound in facial recognition technology.

Through the lens of seven artists working with a range of digital media, *In Real Life* presents works that grapple with the fraught relationship between humans and technology, with an emphasis on the social and aesthetic ramifications of machine "seeing." With a charged underpinning of human biases, these pieces, many of which were generated through algorithmics, present a speculative near-future wherein the socio-political consequences of AI have already begun to compromise how we visualize the world—and our humanity.

FEATURED ARTISTS

STEPHANIE DINKINS
TREVOR PAGLEN
LEO SELVAGGIO
MAIJA TAMMI
JOSÉ ORLANDO VILLATORO
XU BING
LIAM YOUNG

Liam Young
Still from *Seoul City Machine*, 2019

WHAT IS AI?

The term "artificial intelligence" (or AI, for short) may conjure imagery from the genre of science fiction, but its implementation has a substantial and very real impact on our world today. AI can be defined the development of computer systems built to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, or translating languages. In the early 1990's the term IRL (short for "in real life") was used online to distinguish the digital world from reality. Today, the lines between these worlds—as well as the lines between human and machine—are becoming increasingly blurred.

KEY THEME
MACHINE LEARNING

Machine learning is the process of computer systems identifying patterns and making decisions based on collected data. Though machine learning happens with minimal human intervention, human intelligence can follow the same patterns. We gather information, reflect on that information, and decide what to do next. These three basic steps are: Input > Processing > Output.

If someone were to show you a photograph of an apple and the caption of that photograph was "nyekundu," what do you think that unfamiliar word means? What would you guess? How confident would you be in your guess? If you were then showed five photographs of an apple, stop sign, fire truck, lobster, and rose next to the caption "nyekundu," what then might you think the unfamiliar word means? By observing how each photograph has a subject that is red, you can reason that the unfamiliar word means "red." You just learned a new word: "nyekundu" means red in Swahili. Machines learn from our data in similar ways.
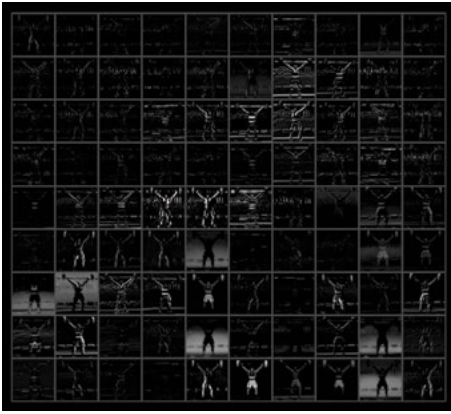
TREVOR PAGLEN
BEHOLD THESE GLORIOUS TIMES!, 2017

Trevor Paglen's *Behold These Glorious Times!* (2017) explores the unsettling nature of machine learning, juxtaposing hundreds of thousands of photos and videos that are used to train artificial intelligence to "see" objects, faces, gestures, and emotions. The flashes of images reveal how AI is taught to interpret visuals, slowly revealing how recognition is shaped, with often blurred distinctions between human bodies, objects, and machines.

      With a soundtrack composed of voice recordings used to teach AI how to recognize speech, Paglen's video is a disquieting glimpse into the inner workings of artificial intelligence. The video projection asks the viewer to see the world through the lens of the machine, just as the machine attempts to perceive the world through human eyes. Notably, Paglen's provocative work suggests that the so-called thoughts, perceptions, and biases in AI are not at all random; machine learning is, at its core, dictated by human design.

QUESTIONS FOR LOOKING AND DISCUSSION

- Machine learning can be used in a variety of ways. A bank may rely on algorithms to determine if there is fraudulent activity on your account. You may have experienced this if you travel without first notifying your bank. Your bank would perhaps "see" a purchase made in an unexpected place, based on your previous supplied data, and freeze your credit card from making future purchases until you verify the purchase. Another example is if you download an app for your favorite store. In exchange for coupons or special offers, you are contributing data to that company each time you make a purchase and each time you step into that store or which aisles you walk through (if you have Location Services on your phone enabled).

  Considering these two examples, how else might you be contributing data for machine learning that you perhaps did not notice before? How do you feel about companies using your data through **algorithms** with or without your awareness?

- Many machines learn from data we voluntarily supply through social media apps or even in emails. Do you think we should be entitled to a certain amount of privacy while using apps and websites? Why or why not?

STEPHANIE DINKINS
CONVERSATIONS WITH BINA48, 2015–ONGOING

Stephanie Dinkins examines the effects of machine learning, addressing the intersection of artificial intelligence and race. In *Conversations with Bina48* (2015–ongoing), Dinkins engages in a series of conversations with a **social robot** prototype named Bina48. This robot, which was designed to appear as the torso of a person of color, responds to Dinkins' questions about life, racism, and prejudice. Dinkins is interested in the possibilities of the tech community transforming into a more inclusive field. Dinkins says: "I am trying to model different ways to model AI. I encourage people who think they are not part of the technological future to get involved.[1]" Her works suggest that through an ultimately human act—listening and understanding—antiracist artificial intelligence may be possible.

DEEPER READING
BINA48

BINA48 was developed by a Hong Kong-based engineering and robotics company in 2010. Though BINA's name is an acronym (standing for "Breakthrough Intelligence via Neural Architecture 48") the bot is also named after Bina Aspen Rothblatt, the wife of Martine Rothblatt, who commissioned the robot's creation with the Terasem Movement Foundation.[2] In an attempt to preserve Bina Aspen Rothblatt's existence past her lifespan, hours of Rothblatt's voice, memories, and thoughts were uploaded to BINA48's database.[3] BINA48 can carry on conversations with human beings. She is also able to respond to questions with the help of thirty-two facial motors enabling different facial expressions, a microphone matched with voice recognition software enabling hearing, motion tracking sensors and video cameras for seeing, and facial recognition software to remember those she has spoken to before. Additionally, BINA48 gains more human-like nuances as she builds her data with each human interaction.

QUESTIONS FOR LOOKING AND DISCUSSION

- In 2016, Twitter launched an experimental chat bot named Tay. The bot was intended to grow in intelligence with each interaction with real Twitter users, learning their behavior and communication styles and becoming more human-like. However, within 24-hours, the bot was taken down after it learned racist and misogynistic language from other users and began posting offensive language of its own. In 2018, Amazon built a hiring algorithm to sift through resumes of applicants to select candidates eligible for interviews. The machine was taught how to choose the right applicant by scanning resumes of current employees and quickly learned that male candidates were statistically preferred and began disqualifying all female candidates.[4]

Considering these stories and the work of Stephanie Dinkins, how do you see the role of AI potentially advancing or setting back humanity's struggles with equity and inclusion? Should humans train AI to surpass our own biases? What are the potential benefits or consequences of training AI to understand race and gender?

1. Dooley, Tatum. "Stephanie Dinkins Is Turning Memoir Into AI." *Garage*, August 15, 2019. https://garage.vice.com/en_us/article/43kdnm/stephanie-dinkins-is-turning-memoir-into-ai.

2. "Bina48 Social Robot with Lifenaut.com." LifeNaut, https://www.lifenaut.com/bina48/.

3. Harmon, Amy (June 24, 2010). HYPERLINK "http://video.nytimes.com/video/2010/06/24/science/1247468035233/interview-with-a-robot.html""Interview with a Robot" (video). New York Times website, November 11, 2019.

4. Hamilton, Isobel Asher. "Amazon Built an AI Tool to Hire People but Had to Shut It down Because It Was Discriminating against Women." Business Insider. Business Insider, October 10, 2018. https://www.businessinsider.com/amazon-built-ai-to-hire-people-discriminated-against-women-2018-10.

SURVEILLANCE AND PRIVACY

Many works included in the exhibition examine how technology and surveillance inform our daily lives. Surveillance is the monitoring of behavior, activities, or information to influence, manage or direct behavior. The impact of surveillance is more complicated than what we see at surface value. Consider the last time you were at work and your boss walked into the room. Did you straighten your posture and work harder in their presence? Now imagine that they were always in the room with you. Would your behaviors change? If so, Why? This is the power of surveillance.

LEO SELVAGGIO
URME SURVEILLANCE, 2014–ONGOING

Chicago is one of the world's most surveilled cities, with approximately thirteen cameras per thousand residents. Concerned with how such extensive monitoring influences human behavior and expressions of identity in public spaces, Leo Selvaggio created *URME Surveillance* (2014–ongoing), a project that slyly critiques the extreme measures one must take to reclaim selfhood in the age of surveillance.

The installation itself explores the subversive actions necessary to avoid recognition in the surveilled city. Reimagining the gallery space as a panopticon, complete with motion-sensor cameras and security mirrors, the viewer is constantly reminded that they are being watched. As an act of intervention, Selvaggio has designed 3-D–printed prosthetic masks of his face, which allow the wearer to thwart facial recognition–monitoring systems. In Selvaggio's dystopic near-future, the viewer must disguise—and ultimately, radicalize—themselves in order to protect their individual identities, and by extension, their humanity.

DEEPER READING
THE PANOPTICON

The idea of the panopticon was first conceived of and proposed by brothers Samuel and Jeremy Bentham in 1786–87 an architectural structure that could enable prisons to operate more efficiently. The design features a central observation tower placed within a circle of prison cells, making it possible for one guard to potentially see every cell and inmate without the inmate knowing when they are being watched. The Benthams believed that through this constant possibility of being seen or surveilled, the behavior of all groups in society could be altered. Jeremy Bentham sought to incorporate the design beyond prisons and into factories, schools and hospitals for maximum efficiency. Although an actual panopticon building was never constructed until the 1920s for the Presidio Modelo prison complex in Cuba, the concept has continued to be a major development in the theory of **surveillance**. In 1975, French philosopher Michel Foucault argued in his book *Discipline and Punish* that the panopticon more than just a building design and could be used for sinister political purposes. Foucault stated: "He is seen, but he does not see; he is an object of information, never a subject in communication."[5]

The Presidio Modelo complex in Cuba in 1995 (now abandoned) Photograph: *The Guardian*

QUESTIONS FOR LOOKING AND DISCUSSION

• Consider the ways facial recognition is already being used in social media. If you upload an image of a family member or friend to Facebook, the website will prompt you to tag the people it automatically scans and connects to other user accounts. Each time you tag images, you are contributing to facial recognition data. While walking down the street, the image on Facebook could be matched to the image of you on the surveillance cameras. Why might Leo Selvaggio be working to subvert facial recognition technologies? What are the potential dangerous or problematic outcomes of facial recognition technologies? What are the potential benefits?

5. McMullan, Thomas. "What Does the Panopticon Mean in the Age of Digital Surveillance?" *The Guardian*. Guardian News and Media, July 23, 2015. https://www.theguardian.com/technology/2015/jul/23/panopticon-digital-surveillance-jeremy-bentham.

XU BING
DRAGONFLY EYES, 2017

Composed from more than 10,000 hours of footage culled from surveillance databases and websites, *Dragonfly Eyes* (2017) integrates actual fragments of contemporary life—from the mundane to the extraordinary—to weave together a fictional narrative. Voiced by actors, *Dragonfly Eyes* follows its protagonist, a "plain faced" young woman named Qing Ting (the Chinese word for "dragonfly," an insect with more than 20,000 eyes), who leaves behind her life at a Buddhist temple and embarks on a journey of love, labor, and celebrity in modern China.

China is well known for being heavily censored and highly surveilled. Currently an estimated 200 million cameras are tracking the movements of the country's citizens, with many of the devices using facial-recognition technology. *Dragonfly Eyes* thus comments on China's increasingly widespread and sophisticated monitoring technology and its effects on privacy, while also shedding light on image-making, fame, and self-surveillance in the digital age.

THE SOCIAL CREDIT SYSTEM IN CHINA

The Chinese government implemented a Social Credit System in 2014 that evaluates the behaviors of civilians. The system uses algorithms to process social media records, credit card purchasing histories, location data records, and captured facial recognition imagery to rank people with scores that are publicly searchable. One's social credit can go down by being caught jaywalking through a surveillance camera or from not paying bank debt, or it can go up when donating to charity. If one's score gets low enough, the individual becomes blacklisted, which then prevents them from being able to purchase train or airplane tickets or to send their kids to private schools, among many other consequences. As of March 2019, there are over 13 million people on the blacklist.[6,7] Additionally, the faces of people on the blacklist are often publicly broadcasted on large billboards to encourage public shaming.[8]

Facial recognition is one element of China's expanding tracking efforts Photo-Illustration by *TIME*: Source Photo: Gilles Sabrié—*The New York Times/Redux*

QUESTIONS FOR LOOKING AND DISCUSSION

• Where are cameras in your daily life? Consider public spaces (on the train, perhaps) or within your home (such as within a smart television or even your laptop camera). What purpose do you think these cameras serve? Consider the potential benefits of these cameras or why they could have been installed. What personal freedoms are you willing to sacrifice for these purposes? What potential benefits could outweigh the cost of surveillance? Why?

6. "Why Has China Restricted the Sale of over 26 Million Plane and Train Tickets?" *South China Morning Post*, April 18, 2019. https://www.scmp.com/economy/china-economy/article/3006763/chinas-social-credit-system-stops-sale-over-26-million-plane.

7. Matsakis, Louise. "How the West Got China's Social Credit System Wrong." *Wired*. Conde Nast, October 25, 2019. https://www.wired.com/story/china-social-credit-score-system/.

8. Smith, Stacey Vanek, and Cardiff Garcia. "What It's Like To Be On The Blacklist In China's New Social Credit System." *NPR*. NPR, October 31, 2018. https://www.npr.org/2018/10/31/662696776/what-its-like-to-be-on-the-blacklist-in-chinas-new-social-credit-system.

GLOSSARY OF TERMS

Algorithm
A set of rules or calculations to be followed to achieve a goal, especially by a computer.

Artificial Intelligence
The development of computer systems built to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, or translating languages.

Chatbot or Social Robot
Software that is programmed to conduct conversations with humans through speech or text. Though the technologies for chatbots is rapidly developing, they are still unable to pass the Turing Test, which requires that a human being should be unable to distinguish the machine from another human being.

Machine learning
The process of computer systems identifying patterns and making decisions based on collected data.

Surveillance
The monitoring of behavior, activities, or information for the purpose of influencing, managing or directing behavior

EXTENDED RESOURCES AND SUGGESTED READING

Books

- James Barrat, Our Final Invention: Artificial Intelligence and the End of the Human Era. New York, N.Y: Thomas Dunne Books, 2015.

- Nick Bostrom, Superintelligence: Paths, Dangers, Strategies. Oxford: Oxford University Press, 2017.

- Pedro Domingos, The Master Algorithm: How the Quest for the Ultimate Learning Machine Will Remake Our World, New York: Basic Books, a member of the Perseus Books Group, 2018.

- Michel Foucault, Discipline and Punish, New York: Vintage Books, n.d.

- William Gibson, Neuromancer, New York: ACE, 2018.

- Meg Leta Jones, Ctrl Z: the Right to Be Forgotten. New York: New York University Press, 2018.

- Lev Manovich, AI Aesthetics, Moscow: Strelka Press, 2018.

Websites and Articles

- Computer Science Crash Course: https://thecrashcourse.com/courses computerscience

- Times Topics: Artificial Intelligence, The New York Times, https://www.nytimes.com topic/subject/artificial-intelligence

ILLINOIS LEARNING STANDARDS ADDRESSED IN THIS GUIDE

Visual Arts Standards

VA:Re7.2.K–12 Perceive and analyze artistic work. Visual imagery influences understanding of, and responses to, the world.

VA:Re8.K–12 Construct meaningful interpretations of artistic work. People gain insights into meanings of artworks by engaging in the process of art criticism.

VA:Re9.K–12 Apply criteria to evaluate artistic work. People evaluate art based on various criteria.

VA:Cn11.K–12 Relate artistic ideas and works with social, cultural, and historical context to deepen understanding. People develop ideas and understandings of society, culture, and history through their interactions with and analysis of art.

Media Arts Standards

MA:Re7.1.PK–12 Anchor Standard 7: Perceive and analyze artistic work. Media artworks can be appreciated and interpreted through analyzing their components.

MA:Re8.1.PK–12 Anchor Standard 8: Construct meaningful interpretations of artistic work. Interpretation and appreciation require engagement with the content, form, and context of media artworks.

MA:Re9.1.PK–12 Anchor Standard 9: Apply criteria to evaluate artistic work. Skillful evaluation and critique are critical components of experiencing, appreciating, and producing media artworks

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