100% DESIGN DEVELOPMENT PACKAGE
Fashion Institute of Technology
Exhibition and Experience Design
December 8, 2023

ARTIFICIAL MINORITY

Emily Tse
EXECUTIVE SUMMARY
Our unconscious biases have been a problem in the past, present, and now the upcoming future.

These biases — racial bias, gender bias, and age bias — perpetuate discrimination in facial recognition technology.

The exhibition “Artificial Minority” brings public awareness to AI ethics, which encourages responsible research and application.

Exploring participatory museum techniques, such as role-play and workshop programming, provide ways to spark dialogue and foster awareness of these ongoing provocative issues.
National Institute of Standards and Technology  
A US Department of Commerce agency established in 1901  

NIST’s mission statement is “to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life.”  

In 2000, NIST started the Face Recognition Vendor Testing Program (FRVT), which conducts evaluations on facial recognition technology. This research provides recommendations to the government on how this technology should be used.

Algorithmic Justice League  
A non-profit organization that started in 2016.

As a poet of code, founder Dr. Buolamwini bridges art and research to convey the social injustice of technology.

American Civil Liberties Union  
A non-profit organization that started in 1920.

ACLU defends people’s rights in the justice system. They combat facial recognition systems in public surveillance because the technology invade privacy and do not acquire consent from people.

Security Industry Association  

SIA supports facial recognition usage for beneficial purposes such as assisting law enforcement in fighting human trafficking, finding missing children, and fighting identity theft.

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Date  
December 8, 2023

Drawing Name  
EX.01.02

Scale  
NTS

Key Plan  
Not Applicable
Cooper Hewitt, Smithsonian Design Museum
Barbara and Morton Mandel Design 3rd Floor Gallery
Primary
High school students, College students, and Adults
Secondary
Educators, Researchers, and Designers
A survey was created to obtain opinions and experiences with facial recognition. It explored people's perspectives on facial recognition and its usage in various applications including law enforcement, education, healthcare, transportation, corporations, and retail.

Thirty-six participants completed the surveys. The surveys were distributed on the campus of Fashion Institute of Technology (87%) and in the Moynihan Train Hall (13%) in New York. Participants ranged from age 19 to age 60. 68% identified as female, 26% were male, and 6% were non-binary.
GOALS

PROJECT GOALS

The exhibition “Artificial Minority” spreads public awareness of embedded biases in facial recognition technology such as statistical bias, human bias, and systematic bias.

It increases understanding of facial recognition usage in everyday activities.

Additionally, it encourages transparency in technological advances that increase people’s quality of life.

EDUCATION GOALS

Visitors hear true stories of people whose lives were impacted by facial recognition, both favorably and unfavorably.

Visitors learn about the advocacy for algorithmic justice and ways NIST is mitigating bias.

They learn about types of human biases and how it seeps into technology.

Visitors understand the importance of joining discussions about technology ethics.

EXPERIENCE GOALS

At digital stations, visitors adopt fictional personas and reflect on diaries from different perspectives. Their reflections are recorded and shared with other visitors.

Through motion gestures, they identify environments where facial recognition systems are used.

They unveil the black box by stepping on trigger pads that activate light boxes that show advocacy efforts.

They participate in AI ethical workflow workshops to build critical thinking skills.

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DATE

December 8, 2023

DRAWING NAME

EX.01.06

SCALE

NTS

KEY PLAN

Not Applicable
BUBBLE FLOOR PLAN
6,000 SQ FT

ENTRY AND EXIT

REAL WORLD IMPACT

ROAD BLOCK

BIAS BUSTING

HUMAN EXPERIENCE

PERSONAL STORIES

EVERYDAY ACTIVITIES

PUBLIC TRUST

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Date
December 8, 2023

Drawing Name
Bubble Floor Plan

Drawing Number
EX.01.08

Scale
3/32" = 1'-0"

Key Plan
Not Applicable
The exhibition “Artificial Minority” is an **eleven-month exhibition** starting from August 12, 2024 through July 16, 2025.

Visitors read **first-person narrative diaries** of true stories of thoughts, feelings, and experiences with the technology.

Then, they are encouraged to **reflect** on the stories and **share their own experiences with facial recognition**.
Entrance

Stairway poster signage

A content warning signage on the poster alerts visitors about sensitive content in the exhibition such as stories of people who were wrongfully arrested or law enforcement using the technology to find suspects of assault.
Introduction

Interactive timeline of facial recognition technology

Visitors press red buttons to activate kinetic type animations and learn about technological advances in facial recognition starting from the 1960’s through 2020’s.
The aluminum spotlight sculpture represents the goal of the exhibition, which is to spread public awareness of biases in algorithms. These include not only computational bias, but also human biases such as confirmation bias and age bias.
Exhibit 2
Adopt-A-Persona
Visitors take personality quizzes and adopt fictional occupations such as police officers, lawyers, and journalists. These specific careers are chosen based on past incidents of people whose lives have been impacted by facial recognition systems.
Project
Artificial Minority

Site
Smithsonian Cooper Hewitt Museum

Client
National Institute of Standards and Technology

Content Sponsors
Algorithmic Justice League
American Civil Liberties Union
Security Industry Association

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Date
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Drawing Name
Personality Quiz

Drawing Number
EX.01.14

Scale
NTS

Key Plan

Read and Reflect

Diaries of people impact by the technology positively and negatively

Throughout the exhibition, there are three kiosk stations where people read diaries and write how they feel and how their persona would feel in response to the stories. This would encourage empathy building and thinking from another’s perspective.
Dear Diary, 

I was awarded teacher of the month last week. Then, this week, they said an algorithm determined I was an unfit teacher and I can be potentially fired. It felt frustrating because I could see the injustice. I could witness daily the impact on my colleagues, on teachers, the demoralization. It radicalized me. I experienced injustice. I was faced with the notion of believing this algorithm that said I’m a bad teacher, when I could see all that I was able to contribute to my students and their lives.

Daniel

Diaries Storyboard
EX.01.16
Visitors ask themselves how much they know about the technology and pass through either gates that says “A Lot” or “Not a Lot.” There are depth sensors to keep track of how many people go through each gate. Scoreboards are shown on the other side.
Visitors plug in megaphone cables and listen to people talking about incidents when they were impacted by facial recognition such as when Robert Williams was wrongfully arrested by the police because of algorithmic misidentification.
Visitors sit under the directional speakers and listen to longer interviews of people's experiences with the technology. For example, NY Times journalist Kashmir Hill talks about her eventful investigation on Clearview AI, a company who created a database of social media photos which they then sold to law enforcement.
Exhibit 6
C.O.M.P.A.S. software

Visitors learn about C.O.M.P.A.S., which the justice system used to determine how likely a defendant is to reoffend. Gender and race bias was found in this algorithm.
Exhibit 7
Facial recognition in everyday activities

Visitors point to a projected video of streets, concert venues, and supermarkets where facial recognition software is used discretely and prominently. Depth sensors capture motion gestures and provide feedback when they correctly identify the cameras.
On the other side of the projected everyday environments, visitors see projected videos of the computers detecting and labeling. For example, China deployed a social credit scoring system that tracks public behavior. This score can affect traveling privileges and employment opportunities.
Visitors determine each facial recognition application as a pro or con based on their own perspective and place the panel on the pro or con wall.
Exhibit 10
The black box becomes a glass box

Visitors step on the trigger pads to activate backlit graphic films that show efforts of advocacy organizations such as Big Brother Watch in the UK who inform people on London streets about police surveillance vans with facial recognition software.
Visitors step on the trigger pad to activate backlit graphic films of SIA who supports the usage of facial recognition to fight human trafficking and find missing children.
Visitors learn how NIST is regulating facial recognition by conducting evaluations on the precision and accuracy of softwares. ACLU combats facial recognition surveillance because it violates the right to privacy.
Exhibit 13

**Immersive room**

Visitors press the red buttons to activate projections displaying how biases seep into technology in the past, present, and upcoming future.
Visitors color in paper masks and then go to the interactive tablet to choose a face filter of an animal or someone they aspire to.
Exhibit 14: How much do you have to change yourself to fit in?

Visitors scan their RFID cards at the mirrored walls to see themselves with the face filter, but it only works when they wear the mask. They learn to empathize with Dr. Buolamwini who had to wear a white mask when programming this “Aspire Mirror” because the software can not detect her face, being that she has dark skin.
Exhibit 16
Bias Busting

Visitors play Monopoly of Biases to learn about human biases such as similarity bias and conformity bias.
Implicit Bias Test
EX.01.31

Visitors take implicit bias tests to witness their own age, gender, and race biases.
Exhibit 18
Pantone’s 110 skin tone shades

Visitors match their skin to one of the 110 shades of push pins and place it on the cork board map. They are able to see that people from the same area can have varying skin tones, hence algorithmic injustice favoring lighter-skin tone is a global issue.
State University of New York

Fashion Institute of Technology
Exhibition and Experience Design
Thesis Capstone 2023

Exhibition Designer
Emily Tse

Project
Artificial Minority

Site
Smithsonian Cooper Hewitt Museum

Client
National Institute of Standards and Technology

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Date
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Drawing Name
Share Thoughts

Drawing Number
EX.01.33

Scale
NTS

Key Plan
Not Applicable

Exhibit 19
Record your own experiences with facial recognition

On the traffic message board, visitors type their experiences with the technology and their responses are projected onto the floor to share with other visitors.
Exhibit 20

Record or listen to other visitors’ stories

Visitors plug in the megaphone cables to activate recording devices and share their stories. They can opt to record in the telephone booth for a more private space. They can also choose to share their voices with other visitors by giving consent to let it play on the directional speakers.

State University of New York

Fashion Institute of Technology
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Thesis Capstone 2023

Exhibition Designer
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Date
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Drawing Name
Join Conversations

Drawing Number
EX.01.34

Scale
NTS

Key Plan
Not Applicable
Visitors tally where they use facial recognition by placing washers on pegboards of where they use facial recognition such as on the phone, in the airport, subway, or supermarket.
Visitors collaborate in a team to brainstorm an idea for an AI startup. They are guided by the projected directions to follow a responsible AI workflow developed by the Museum and AI Network in 2019. They would answer questions such as “Is there potential bias in the dataset?”
Exhibit 23
Apple’s Face ID

Visitors step up to the phone and witness the iPhone projecting 30,000 infrared dots on the face to create a depth map of the face.
Exhibit 24
Becoming comfortable in joining conversations about AI ethics

At the exit experience, visitors end with Dr. Buolamwini’s quote “If you have a face you have a place in the conversation about AI.” They vote for how much they support the technology by recycling their RFID card in the voting bins.
Fashion Institute of Technology
Exhibition and Experience Design
Thesis Capstone 2023

Exhibition Designer
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Date
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Drawing Name
Isometric View

Drawing Number
EX.01.39

Scale
NTS

Key Plan
Not Applicable
Digital Experience

Website

Visitors can experience the exhibition digitally. All the exhibits are transformed into digital experiences. Digital visitors also adopt fictional personas and read about the stories of Dr. Buolamwini, Williams, and Conlyn. Visitors’ online contribution are recorded and incorporated into the exhibition’s digital stations.
SCHEDULES AND LISTS
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Date: December 8, 2023
Drawing Name: Graphic Schedule 2/2
Drawing Number: EX.02.02
Scale: NTS
Key Plan: Not Applicable
## Graphic Specifications

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<td>C</td>
<td>Dye sublimation on sunbrella fabric</td>
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### Date

December 8, 2023

### Drawing Name

Graphic Specifications

### Drawing Number

EX.02.03

### Scale

NTS

### Key Plan

Not Applicable
## Finish Schedule (1/2)

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<td>FL01</td>
<td>Carpet</td>
<td>Low-pile blue carpet Pantone P 57 8C</td>
<td>04A.02, 06A.01, 07A.03</td>
<td><img src="image8.jpg" alt="Image" /></td>
</tr>
<tr>
<td>FL02</td>
<td>Steel</td>
<td>Diamond steel sheet</td>
<td>06A.02, 06A.03, 06A.05</td>
<td><img src="image9.jpg" alt="Image" /></td>
</tr>
<tr>
<td>FL03</td>
<td>Rubber</td>
<td>1/4&quot; Black rubber with white rubber inlay</td>
<td>11A.03</td>
<td><img src="image10.jpg" alt="Image" /></td>
</tr>
<tr>
<td>FL04</td>
<td>Vinyl</td>
<td>Rosebrand vinyl mirror floor with non-slip coating</td>
<td>09A.01, 09A.02, 09A.03</td>
<td><img src="image11.jpg" alt="Image" /></td>
</tr>
<tr>
<td>FL05</td>
<td>Vinyl</td>
<td>Vinyl tile flooring</td>
<td>12A.01, 12A.02, 12A.03</td>
<td><img src="image12.jpg" alt="Image" /></td>
</tr>
</tbody>
</table>

### Disclaimer

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## Finish Schedule (2/2)

<table>
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<tbody>
<tr>
<td>AC01</td>
<td>Acrylic</td>
<td>1/4” acrylic sheet</td>
<td>07A.02, 07A.03, 07A.04</td>
<td><img src="acrylic.png" alt="Image" /></td>
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<tr>
<td>MI01</td>
<td>Mirror</td>
<td>Half-silvered mirror, one way mirror film with adhesive</td>
<td>09A.01, 09A.02</td>
<td><img src="mirror.png" alt="Image" /></td>
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<tr>
<td>MI02</td>
<td>Mirror</td>
<td>Avery chrome mirror vinyl</td>
<td>04A.04</td>
<td><img src="mirror.png" alt="Image" /></td>
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<tr>
<td>AL02</td>
<td>Aluminum</td>
<td>Aluminum bendable wire</td>
<td>04A.04, 12A.02</td>
<td><img src="aluminum.png" alt="Image" /></td>
</tr>
<tr>
<td>AL03</td>
<td>Aluminum</td>
<td>1/4” aluminum base plate</td>
<td>04A.04</td>
<td><img src="aluminum.png" alt="Image" /></td>
</tr>
<tr>
<td>AL04</td>
<td>Aluminum</td>
<td>Embossed aluminum sheet</td>
<td>06A.02, 06A.03, 06A.05</td>
<td><img src="aluminum.png" alt="Image" /></td>
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<tr>
<td>LA01</td>
<td>Layered Paper</td>
<td>Formica red laminate</td>
<td>07A.01, 10A.01</td>
<td><img src="refrigerator.png" alt="Image" /></td>
</tr>
<tr>
<td>LA02</td>
<td>Paper</td>
<td>Formica blue laminate</td>
<td>07A.01, 10A.01</td>
<td><img src="-refrigerator.png" alt="Image" /></td>
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<tr>
<td>LA03</td>
<td>Paper</td>
<td>Formica green laminate</td>
<td>07A.01, 10A.01</td>
<td><img src="refrigerator.png" alt="Image" /></td>
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<td>DI01</td>
<td>Vinyl</td>
<td>Dichroic film</td>
<td>12A.02</td>
<td><img src="vinyl.png" alt="Image" /></td>
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<td>CH01</td>
<td>Chrome</td>
<td>Polished chrome pyramid pendant</td>
<td>09A.02, 11A.03</td>
<td><img src="chrome.png" alt="Image" /></td>
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<tr>
<td>FT01</td>
<td>Rubber</td>
<td>Floor transition strip</td>
<td>09A.03, 09A.02, 11A.03</td>
<td><img src="rubber.png" alt="Image" /></td>
</tr>
</tbody>
</table>

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**Date:**
December 8, 2023

**Drawing Name:**
Finish Schedule 2/2

**Drawing Number:**
EX.02.05

**Scale:**
NTS

**Key Plan:**
Not Applicable

**Client:**
National Institute of Standards and Technology

**Content Sponsors:**
Algorithmic Justice League
American Civil Liberties Union
Security Industry Association

**Site:**
Smithsonian Cooper Hewitt Museum

**Project:**
Artificial Minority

---

Fashion Institute of Technology
Exhibition and Experience Design
Thesis Capstone 2023

Exhibition Designer
Emily Tse
<table>
<thead>
<tr>
<th>Code</th>
<th>Type</th>
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<th>Quantity</th>
<th>Location</th>
<th>Image</th>
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<tbody>
<tr>
<td>L01</td>
<td>Downlight on track</td>
<td>ETC</td>
<td>Irideon FPZ, 800 lumens, dimmable, 2700K Gallery, 90+CRI</td>
<td>70</td>
<td>04A.02, 05A.02, 06A.01, 09A.03, 10A.02, 11A.03, 12A.02</td>
<td><img src="lighting_schedules.png" alt="Image" /></td>
</tr>
<tr>
<td>L02</td>
<td>Laser beam gobo on track</td>
<td>LSI</td>
<td>BPM Series, Gobo slot, 15-30 ft throws</td>
<td>20</td>
<td>06A.02, 06A.05</td>
<td><img src="lighting_schedules.png" alt="Image" /></td>
</tr>
<tr>
<td>L03</td>
<td>RGB Mini LED Light</td>
<td>Lumenstar</td>
<td>1.7” diameter, 75 lumens, dimmable, 85 CRI</td>
<td>17</td>
<td>03A.02, 08A.01, 08A.03</td>
<td><img src="lighting_schedules.png" alt="Image" /></td>
</tr>
<tr>
<td>L04</td>
<td>Wall washer</td>
<td>ERCO</td>
<td>Grazing light wallwasher, 590lm - 4950lm, 3000K, 82 CRI</td>
<td>6</td>
<td>03A.02, 04A.01, 04A.03, 04A.04</td>
<td><img src="lighting_schedules.png" alt="Image" /></td>
</tr>
<tr>
<td>L05</td>
<td>Desk lamp</td>
<td>Reliable</td>
<td>UberLight™ Flex 3100TL, Clamp, 270° rotational head, 4000K, 600 Lumens, 80+CRI</td>
<td>13</td>
<td>04A.01, 04A.03, 05A.02, 07A.03</td>
<td><img src="lighting_schedules.png" alt="Image" /></td>
</tr>
<tr>
<td>L06</td>
<td>Tube LED wall sconce</td>
<td>Lumens</td>
<td>936 lumens, 3000K, 92 CRI</td>
<td>7</td>
<td>09A.02, 10A.01</td>
<td><img src="lighting_schedules.png" alt="Image" /></td>
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</table>
# Lighting Schedule (2/2)

<table>
<thead>
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<th>Code</th>
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<th>Details</th>
<th>Quantity</th>
<th>Location</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>L07</td>
<td>Recessed uplight</td>
<td>ERCO</td>
<td>Tesis, 4000K with CRI 92, anti-slip safety glass</td>
<td>15</td>
<td>07A.02, 07A.03, 07A.04</td>
<td><img src="image1.png" alt="Image" /></td>
</tr>
<tr>
<td>L08</td>
<td>Linear LED strip</td>
<td>Luminii</td>
<td>LineLED LL42 VHO, 320 lm/ft, 95+ CRI</td>
<td>27</td>
<td>03A.01, 03A.02, 04A.01, 04A.03, 04A.04, 07A.02, 07A.03, 07A.04</td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td>L09</td>
<td>LED Moving Head</td>
<td>PSSL</td>
<td>30W white LED, 7 colors, 540° pan, 270° tilt</td>
<td>1</td>
<td>04A.02</td>
<td><img src="image3.png" alt="Image" /></td>
</tr>
</tbody>
</table>

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**Date**

December 8, 2023

**Drawing Name**

Lighting Schedule 2/2

**Drawing Number**

EX.02.07

**Scale**

NTS

**Key Plan**

Not Applicable
## Media Schedule (1/3)

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<th>Details</th>
<th>Quantity</th>
<th>Location</th>
<th>Image</th>
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<tbody>
<tr>
<td>AV01</td>
<td>Projector</td>
<td>Epson</td>
<td>4K PRO-UHD LS12000, 8.3 million pixels, 4K at 120 Hz, 1080p at 120 Hz, 204 W - 311 W, 22-30 dB</td>
<td>11</td>
<td>06A.01, 08A.05, 10A.02, 11A.03, 12A.03</td>
<td><img src="image1.jpg" alt="Projector" /></td>
</tr>
<tr>
<td>AV02</td>
<td>Digital display</td>
<td>Elo Touch Solutions</td>
<td>Elo 2770L 27&quot; Full HD Touchscreen Monitor, 1920 x 1080 @ 50, 60Hz</td>
<td>2</td>
<td>10A.01</td>
<td><img src="image2.jpg" alt="Display" /></td>
</tr>
<tr>
<td>AV03</td>
<td>Interactive tabletop</td>
<td>Ideum</td>
<td>Colossus II 84&quot; 4K UHD tables with projected capacitive touch technology</td>
<td>1</td>
<td>09A.03</td>
<td><img src="image3.jpg" alt="Tabletop" /></td>
</tr>
<tr>
<td>AV04</td>
<td>Directional speaker</td>
<td>Holosonics</td>
<td>AS-168iX, 85 dB SPL @ 1kHz, 25W max power draw, 16&quot;L x 8&quot;W x 1.66&quot;H, 2.8 lbs</td>
<td>7</td>
<td>05A.02</td>
<td><img src="image4.jpg" alt="Speaker" /></td>
</tr>
<tr>
<td>AV05</td>
<td>Infrared depth sensor</td>
<td>Intel</td>
<td>RealSense™ Depth Camera D435, 90 fps, 1280 x 720, Depth field of view 87° x 58°</td>
<td>16</td>
<td>06A.01, 06A.04, 09A.03, 10A.02</td>
<td><img src="image5.jpg" alt="Sensor" /></td>
</tr>
<tr>
<td>AV06</td>
<td>Recording device</td>
<td>Sony</td>
<td>TX660 Digital Voice Recorder, 16 GB, 4&quot; high</td>
<td>3</td>
<td>11A.01</td>
<td><img src="image6.jpg" alt="Recorder" /></td>
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### Media Schedule (1/3)

**EX.02.08**
# Media Schedule (2/3)

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<th>Quantity</th>
<th>Location</th>
<th>Image</th>
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<tbody>
<tr>
<td>AV07</td>
<td>LCD video wall</td>
<td>LG</td>
<td>Ultra-narrow 3.5 mm bezel-to-bezel</td>
<td>4</td>
<td>08A.01, 08A.02, 08A.03, 08A.04</td>
<td><img src="image1.png" alt="LCD Video Wall" /></td>
</tr>
<tr>
<td>AV08</td>
<td>Fog machine</td>
<td>Chauvet DJ</td>
<td>Hurricane Haze 2D, water-based haze machine, 18.7 lb</td>
<td>2</td>
<td>06A.02, 06A.05</td>
<td><img src="image2.png" alt="Fog Machine" /></td>
</tr>
<tr>
<td>AV09</td>
<td>RFID reader</td>
<td>Vulcan RFID™</td>
<td>Iron USB Reader, 2.83&quot; x 2.83&quot; x 0.91&quot;, 0.18 lbs</td>
<td>16</td>
<td>05A.02, 09A.01, 09A.03</td>
<td><img src="image3.png" alt="RFID Reader" /></td>
</tr>
<tr>
<td>AV10</td>
<td>Button</td>
<td>Spark Fun</td>
<td>Dome Push button, 100 mm diameter x 72 mm height, 100 grams</td>
<td>2 sets of 7-count</td>
<td>03A.01, 03A.02, 08A.01, 08A.03, 08A.04</td>
<td><img src="image4.png" alt="Button" /></td>
</tr>
<tr>
<td>AV11</td>
<td>Foot trigger pedal</td>
<td>Ddrum</td>
<td>Spring-action, heel grip</td>
<td>4</td>
<td>07A.02, 07A.03, 07A.04</td>
<td><img src="image5.png" alt="Foot Trigger" /></td>
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<tr>
<td>AV12</td>
<td>LED sign counter</td>
<td>Electronic Displays</td>
<td>12&quot;L x 4&quot;H x 2.5&quot;D, viewing distance 90 to 100 feet</td>
<td>2</td>
<td>04A.04</td>
<td><img src="image6.png" alt="LED Sign Counter" /></td>
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<tr>
<td>Code</td>
<td>Type</td>
<td>Manufacturer</td>
<td>Details</td>
<td>Quantity</td>
<td>Location</td>
<td>Image</td>
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<tr>
<td>AV13</td>
<td>Speaker</td>
<td>Aurasound</td>
<td>49mm, 84 dB sensitivity</td>
<td>5</td>
<td>05A.01, 11A.01</td>
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<tr>
<td>AV14</td>
<td>Digital Kiosk</td>
<td>Elo Touch</td>
<td>22” full HD touchscreen monitor, 1920 x 1080 @ 50, 60Hz</td>
<td>13</td>
<td>04A.01, 04A.03, 05A.01</td>
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<td>Solutions</td>
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<tr>
<td>AV15</td>
<td>Tablet</td>
<td>Samsung</td>
<td>2560 x 1600 pixels, 12.4 inches</td>
<td>20</td>
<td>03A.01, 03A.02, 05A.01, 12A.03</td>
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<tr>
<td>AV16</td>
<td>ID card printer</td>
<td>Kodak</td>
<td>168x179x259mm, Dye-sublimation printing, 6.2 lbs</td>
<td>9</td>
<td>04A.01, 04A.03</td>
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</table>

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**Date**

December 8, 2023

**Drawing Name**

Media Schedule 3/3

**Drawing Number**

EX.02.10

**Scale**

NTS

**Key Plan**

Not Applicable
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<tbody>
<tr>
<td>OBJ01</td>
<td>Unmasking AI Book</td>
<td>Paper</td>
<td>04A.01, 04A.03, 05A.02</td>
<td><img src="image1" alt="Unmasking AI Book" /></td>
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<tr>
<td>OBJ02</td>
<td>Weapons of Math Destruction Book</td>
<td>Paper</td>
<td>04A.01, 04A.03, 05A.02</td>
<td><img src="image2" alt="Weapons of Math Destruction Book" /></td>
</tr>
<tr>
<td>OBJ03</td>
<td>AI Ethics Book</td>
<td>Paper</td>
<td>04A.01, 04A.03, 05A.02</td>
<td><img src="image3" alt="AI Ethics Book" /></td>
</tr>
<tr>
<td>OBJ04</td>
<td>Algorithms of Oppression Book</td>
<td>Paper</td>
<td>04A.01, 04A.03, 05A.02</td>
<td><img src="image4" alt="Algorithms of Oppression Book" /></td>
</tr>
<tr>
<td>OBJ05</td>
<td>Black Skin, White Masks Book</td>
<td>Paper</td>
<td>04A.01, 04A.03, 05A.02</td>
<td><img src="image5" alt="Black Skin, White Masks Book" /></td>
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<tr>
<td>OBJ06</td>
<td>Viral Justice Book</td>
<td>Paper</td>
<td>04A.01, 04A.03, 05A.02</td>
<td><img src="image6" alt="Viral Justice Book" /></td>
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<td>OBJ07</td>
<td>Automating Inequality book</td>
<td>Paper</td>
<td>04A.01, 04A.03, 05A.02</td>
<td><img src="image7" alt="Automating Inequality book" /></td>
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<tr>
<td>OBJ08</td>
<td>Human Compatible Book</td>
<td>Paper</td>
<td>04A.01, 04A.03, 05A.02</td>
<td><img src="image8" alt="Human Compatible Book" /></td>
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<tr>
<td>OBJ09</td>
<td>Hello World: Being Human in the Age of Algorithms Book</td>
<td>Paper</td>
<td>04A.01, 04A.03, 05A.02</td>
<td><img src="image9" alt="Hello World: Being Human in the Age of Algorithms Book" /></td>
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<tr>
<td>OBJ10</td>
<td>The Myth of Artificial Intelligence book</td>
<td>Paper</td>
<td>04A.01, 04A.03, 05A.02</td>
<td><img src="image10" alt="The Myth of Artificial Intelligence book" /></td>
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<td>OBJ11</td>
<td>Handcuffs</td>
<td>Steel</td>
<td>05A.02</td>
<td><img src="image11" alt="Handcuffs" /></td>
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<tr>
<td>OBJ12</td>
<td>Breathalyzer</td>
<td>Plastic</td>
<td>05A.02</td>
<td><img src="image12" alt="Breathalyzer" /></td>
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<tr>
<td>OBJ13</td>
<td>Mask</td>
<td>Plastic</td>
<td>05A.02</td>
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<td>OBJ14</td>
<td>Red megaphone</td>
<td>Plastic</td>
<td>05A.01</td>
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<tr>
<td>OBJ15</td>
<td>Blue megaphone</td>
<td>Plastic</td>
<td>11A.01</td>
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<tr>
<td>OBJ16</td>
<td>Traffic cone</td>
<td>Plastic</td>
<td>11A.02</td>
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<tr>
<td>OBJ17</td>
<td>Traffic pylon</td>
<td>Plastic</td>
<td>11A.02</td>
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<tr>
<td>OBJ18</td>
<td>Security camera</td>
<td>Plastic</td>
<td>06A.02, 06A.05</td>
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<tr>
<td>OBJ19</td>
<td>Double-edged sword</td>
<td>Aluminum</td>
<td>07A.01</td>
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<tr>
<td>OBJ20</td>
<td>Markers</td>
<td>Ink, Plastic</td>
<td>09A.02</td>
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<tr>
<td>OBJ21</td>
<td>Stop sign</td>
<td>Aluminum</td>
<td>11A.03</td>
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<tr>
<td>OBJ22</td>
<td>Bump sign</td>
<td>Aluminum</td>
<td>11A.01</td>
<td></td>
</tr>
<tr>
<td>OBJ23</td>
<td>Traffic light</td>
<td>Aluminum, Plastic</td>
<td>11A.02</td>
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<tr>
<td>OBJ24</td>
<td>Wall Mounted Rotary Dial Corded Telephone</td>
<td>Brushed chrome, Plastic</td>
<td>11A.01</td>
<td></td>
</tr>
</tbody>
</table>

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**Date**
December 8, 2023

**Drawing Name**
Object Schedule 2/2

**Drawing Number**
EX.02.12

**Scale**
NTS

**Key Plan**
Not Applicable
PLANS, SECTIONS, AND ELEVATIONS
Artificial Minority

Site
Smithsonian Cooper Hewitt Museum

Client
National Institute of Standards and Technology

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Security Industry Association

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Date
December 8, 2023

Drawing Name
Symbols List

Drawing Number
EX.03.01

Scale
NTS

Key Plan
Not Applicable
Fashion Institute of Technology
Exhibition and Experience Design
Thesis Capstone 2023

Exhibition Designer
Emily Tse

Project
Artificial Minority

Site
Smithsonian Cooper Hewitt Museum

Client
National Institute of Standards and Technology

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Security Industry Association

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Date
December 8, 2023

Drawing Name
Venue Site

Drawing Number
EX.03.02

Scale
NTS

Key Plan
Not Applicable
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Site
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Client
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Date
December 8, 2023

Drawing Name
Coded Floor Plan

Drawing Number
EX.03.03

Scale
3/32" = 1'– 0"

Key Plan
Not Applicable
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December 8, 2023

EX.03.05

3/32" = 1'– 0"

Not Applicable

WAYFINDING
INTRODUCTION
EXHIBIT CONTENT
DIRECTIVE
LABEL
MURAL
DIGITAL MEDIA
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Date
December 8, 2023

Drawing Name
Material Plan

Drawing Number
EX.03.06

Scale
3/32" = 1' - 0"

Key Plan
Not Applicable
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Date
December 8, 2023

Drawing Name
Reflected Ceiling Plan

Drawing Number
EX.03.07

Scale
3/32" = 1'–0"

Key Plan
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Date
December 8, 2023

Drawing Name
EX.03.08

Drawing Number
Media Plan

Scale
3/32” = 1’–0”

Key Plan
Not Applicable
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Date: December 8, 2023
Drawing Name: Power Plan
Drawing Number: EX.03.09
Scale: 3/32" = 1'–0"
Key Plan: Not Applicable
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Date
December 8, 2023

Drawing Name
Section 2

Drawing Number
EX.03.11

Scale
3/16" = 1 - 0"

Key Plan
Not Applicable
Inspiration from Alexandre Rodtchenko, Barbara Kruger and Jenny Holzer
Artificial Minority

Combating unconscious biases embedded in facial recognition

Our unconscious biases have been a problem in the past, present, and now the upcoming future. These biases—racial bias, gender bias, and age bias—perpetuate discrimination in technology.
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Date
December 8, 2023

Drawing Name
Color Palette

Drawing Number
EX.04.05

Scale
NTS

Key Plan
Not Applicable
EXHIBITION

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DATE
December 8, 2023

DRAWING NAME
Poster Variations

DRAWING NUMBER
EX.04.06

SCALE
NTS

KEY PLAN
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Date  
December 8, 2023  

Drawing Name  
Posters Mockup  

Drawing Number  
EX.04.07  

Scale  
NTS  

Key Plan  
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Date
December 8, 2023

Drawing Name
Exterior Wayfinding 2

Drawing Number
EX.04.09

Scale
NTS

Key Plan
Not Applicable
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Date
December 8, 2023

Drawing Name
Interior Wayfinding

Drawing Number
EX.04.10

Scale
NTS

Key Plan
Not Applicable
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Date
December 8, 2023

Drawing Name
Wayfinding at Central Park

Drawing Number
EX.04.11

Scale
NTS

Key Plan
Not Applicable
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Date
December 8, 2023

Drawing Name
Collateral 1

Drawing Number
EX.04.12

Scale
NTS

Key Plan
Not Applicable
It all starts with an idea.

Learn how to work with an ethical AI workflow by asking critical questions.

Spin the wheel. If it landed on 1, then answer questions about your data input.

Collateral 2

You have received funding for an AI startup.

PRACTICE RESPONSIBLE AI

1. What is the purpose of this data?
2. How reliable is the data?
3. What is the source of the data?
4. Is the data biased?
5. Is the data complete?
6. How was the data collected?
7. What is the context of the data?
8. How can the data be used ethically?
9. What are the potential risks of using the data?
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Date
December 8, 2023

Drawing Name
Graphic Family
EX.04.14

Scale
NTS

Key Plan
Not Applicable

"EVERY TECHNOLOGY IS A DOUBLE-EDGED SWORD."
— DR. FEI-FEI LI

"HOW MUCH DO YOU HAVE TO CHANGE YOURSELF TO FIT IN?"
— DR. JOY BOLAMWINI

Source: Microsoft

Acquire new image from camera
Convert color to grayscale
Cascade classifier Detect faces
Face detected? No
Yes
Yes
No
Detect eyes in face images
Two eyes detected?
Normalize face images size and orientation
Contrast and lighting enhancements
Facial Recognition
Face samples collection
PCA classifier Recognition training
Cascade classifier

Source: Museum and AI Network

Responsible AI

1 2 3 4 5 6

"DO YOU FEEL?"

"IF IT IS A HIGH RISK SUSPECT, DO YOU FOLLOW THEM?"
— STATE UNIVERSITY OF NEW YORK

"CONTEST WARNING
THE EXHIBIT CONTAINS UPTONNING CONTENT.
PLEASE SPEAK TO AN EMPLOYEE FOR ASSISTANCE.
PARENTAL GUIDANCE IS RECOMMENDED.

shaken
empowered
aware
overwhelmed
confused
hopeful
stunned
intrigued
uneasy
alert
stressed

"MONOPOLY OF BIASES"

? ?

? ?

GO

how does it work?


"JUMP TO ROLL DICE"

? ?

? ?

? ?

? ?

? ?

? ?

"YOU CAN'T TRUST THE COMPUTER. IT'S JUST A MACHINOUE."
— BIG BROTHER WATCH

"WHAT ARE YOU TRYING TO TELL ME?"
— SI"

"RECOGNIZE YOUR EXPERIENCES WITH FACIAL RECOGNITION"

"YOU CAN'T TRUST THE COMPUTER. IT'S JUST A MACHINOUE."
— BIG BROTHER WATCH

"WHAT ARE YOU TRYING TO TELL ME?"
— SI"
DETAILS
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Date
December 8, 2023

Drawing Name
C.O.M.P.A.S.

Drawing Number
EX.05.03

Scale
3/8" = 1'-0"

Key Plan
Not Applicable

COMPAS
Correctional Offender Management Profiling for Alternative Sanctions is a software that courts use to analyze the riskiness of a defendant to reoffend. It is used in New York, California, Florida, and Wisconsin.
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Date
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Drawing Name
FLOOR GRAPHIC WAYFINDING TOP

Scale: 3/4” = 1’ – 0”

Key Plan
Not Applicable
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Date
December 8, 2023

Drawing Name
BOOKCASE

Drawing Number
EX.05.05

Scale
\( \frac{1}{2} ^\prime = 1 ^\prime - 0 ^\prime \)

Key Plan
Not Applicable
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Date
December 8, 2023

Drawing Name
ADOPT-A-PERSONA

Drawing Number
EX.05.07

Scale
1/4" = 1'-0"

Key Plan
Not Applicable
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Date
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Drawing Name
ADOPT-A-PERSONA SECTION 2

Drawing Number
EX.05.09

Scale
3/8" = 1'-0"

Key Plan
Not Applicable
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Drawing Name
BIAS SCULPTURE

Drawing Number
EX.05.10

Scale
3/16" = 1'–0"

Key Plan
Not Applicable
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Date
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Drawing Name
MASK

Drawing Number
EX.05.11

Scale
3/8" = 1' – 0"

Key Plan
Not Applicable
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Date
December 8, 2023

Drawing Name
PUBLIC TRUST DETAIL

Drawing Number
EX.05.13

Scale
3/16" = 1'–0"

Key Plan
Not Applicable
Site
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Date
December 8, 2023

Drawing Name
PUBLIC TRUST SECTION 1

Drawing Number
EX.05.14

Scale
3/4" = 1'-0"

Key Plan
Not Applicable
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Date 
December 8, 2023 

Drawing Name 
SMALL PANELS 

Drawing Number 
EX.05.16 

Scale 
3/8" = 1'-0" 

Key Plan 
Not Applicable 

07A.04 SMALL BACKLIT GRAPHIC PANELS FRONT 
SCALE: 3/8" = 1'-0" 

07A.04 SMALL BACKLIT GRAPHIC PANELS TOP 
SCALE: 3/8" = 1'-0" 

07A.04 SMALL BACKLIT GRAPHIC PANELS SIDE 
SCALE: 3/8" = 1'-0" 

LED STRIP LIGHT 
RECTANGULAR STAINLESS STEEL SURFACE POST WITH CLAMPS
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Date
December 8, 2023

Drawing Name
Model Making

Drawing Number
EX.06.02

Scale
NTS

Key Plan
Not Applicable
SURVEY AND SITE VISIT

This survey is for a thesis project about artificial intelligence. Your responses will be anonymous and confidential. Your short responses may be anonymously cited in the research material. Participation and continuation in the project is entirely voluntary. You may skip any questions that may make you feel uncomfortable. Thank you for your time.

Age (optional) __________
Gender (optional) __________
Ethnicity (optional) __________

Please answer the following questions on a scale of 1 (least) – 10 (most).

1. How often do you interact with facial recognition in your daily life?
   1  2  3  4  5  6  7  8  9  10

2. How much do you support facial recognition usage in law enforcement, i.e., finding missing persons and determining if a defendant is at risk of reoffending?
   1  2  3  4  5  6  7  8  9  10

3. How much do you support facial recognition usage in education, i.e., preventing school shootings and detecting students’ emotional states in classrooms?
   1  2  3  4  5  6  7  8  9  10

4. How much do you support facial recognition usage in healthcare, i.e., predicting risk of skin cancer and detecting unsafe ICU patients’ behaviours?
   1  2  3  4  5  6  7  8  9  10

5. How much do you support facial recognition usage in transportation, i.e., security in transportation hubs and border control efficiency?
   1  2  3  4  5  6  7  8  9  10

6. How much do you support facial recognition usage in corporations, i.e., employee monitoring and recruitment process?
   1  2  3  4  5  6  7  8  9  10

7. How much do you support facial recognition usage in retail, i.e., theft prevention in stores and personalized shopping experience?
   1  2  3  4  5  6  7  8  9  10

8. What do you think about facial recognition? (optional)

9. What positive experience(s) did you ever have with facial recognition? (optional)

10. What negative experience(s) did you ever have with facial recognition? (optional)

This survey form will be kept by the researcher for at least three years beyond the end of the study and was approved by the FIT-IRB on 11-9-23.
THANK YOU