

Product Requirements Document

BlackMirror

January 20th, 2023

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Summary

BlackMirror is the best AR Networking tool coming to a Hololens near you - 03/23.

Project Description

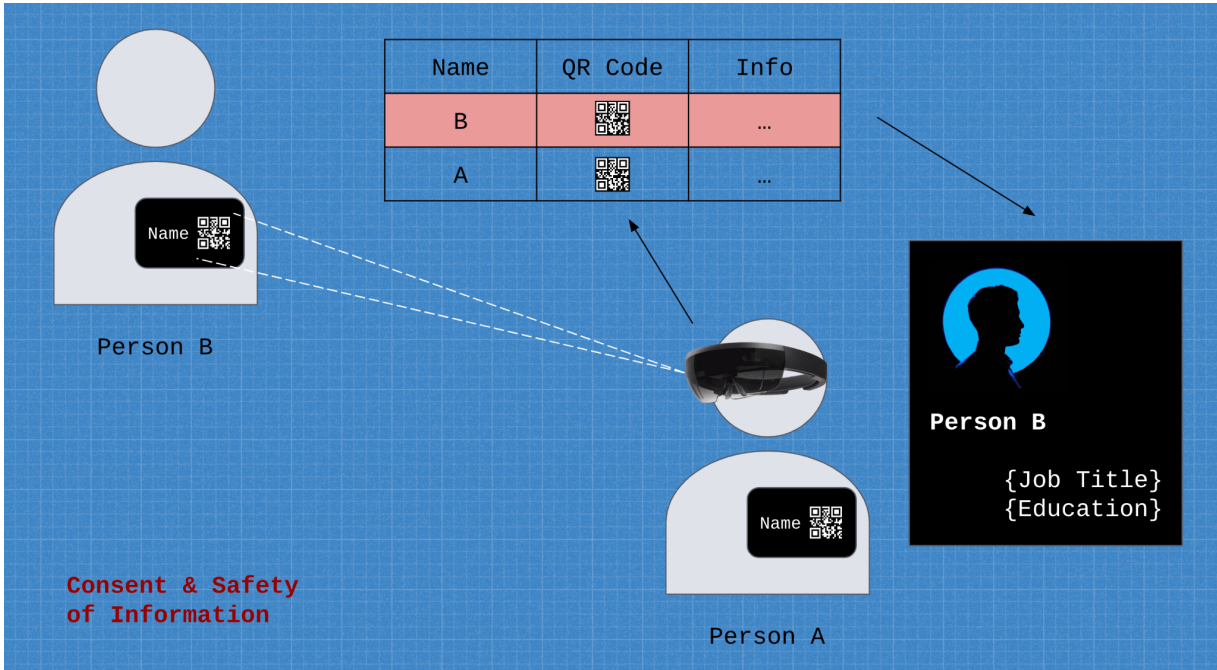
In a room full of individuals, it can often be hard to find the right person to start chatting with. Whether this be at a career fair, a business conference, at a University social event, or even in a new class, creating a connection and lasting impression with individuals can prove to be difficult. Imagine you are at a career fair and looking for the recruiting officer for your dream company. Having a tool to help navigate a crowd to look for someone like that would provide much more ease and efficiency in such an experience.

BlackMirror is an augmented reality application that focuses on enhancing the networking experience. For each unique event, it provides relevant data about participating users via information they submitted beforehand. This is used to ease introductions, find common-ground and form connections. With a tool like this, there is an ability to look around the room and get a sense of who you want to network with. It gives you a baseline of information – details that users are choosing to provide to those around them – and allows more efficient networking for individuals. BlackMirror works to enhance experiences in getting to know new people. Using the AR capabilities of HoloLens 2, users will opt into our experience and be given QR codes that associate them with their public information. Users will be able to scan and interact with other people's profiles before and/or during interactions with that person, providing information to seed conversation. Not only will this make conversations and connections easier, but will make them far more memorable as well.

User Experience

Users will be able to scan other people's QR codes through a HoloLens 2 and pull up that person's profile. The profiles and associated QR codes will be constructed from inputted user information before an event. Visually the profile should be elegant, stable, and relay important information about an individual. It will allow users to seamlessly connect and learn more about each other, and makes networking 10x easier.

In future iterations of BlackMirror, people will be able to use these virtual profiles to connect on LinkedIn or other social media platforms. Furthermore, people will be able to filter by profiles and pull up old ones they would like to review.



Deliverables

MVP	Successfully scan one QR code through the HoloLens 2 from a reasonable distance that will pull up a basic profile.
Target Product	User creates a profile and inputs their information. A QR code is generated for them. The HoloLens 2 successfully scans the QR code from a reasonable distance creating a good user experience. Once scanned, the QR code will pull up a fully polished virtual profile with user-inputted information.
Stretch Goals	Make profiles interactive (connect with users through their profile/LinkedIn, save their resume, etc), add filters to profiles, etc.

Performance Metrics

The performance metrics for our product are as follows:

<i>Performance Metric</i>	<i>Indicators of Success</i>
User Experience	- Visual information clear to user and non-obstructive

	<ul style="list-style-type: none"> - QR Code recognition of name-tags is smooth - QR code scan leads to correct associated information - Features afford their use/function on screen for users - UI for visual information is intuitive - name, job title are listed in an order that makes sense
Stability	<ul style="list-style-type: none"> - QR Codes not associated with our application are handled appropriately - Multiple scans of same QR codes leads to stable profile
Effectiveness	<ul style="list-style-type: none"> - Provides public information surrounding user to aid conversation/introduction - Creates connections between users - Recognition of QR codes and accurate information
Performance/Accuracy	<ul style="list-style-type: none"> - Smooth transition between different QR Code scanning - QR code scan leads to correct associated information

Milestones

Week 4 (Jan 22nd - Jan 28th): Implement QR-Code Tracking & Hard-Coded Profile Visual [SEPARATE]			
<i>Kevin</i>	<i>Mariya</i>	<i>Nour</i>	<i>Zage</i>
<ul style="list-style-type: none"> - Investigate QR-Code Tracking w/ Nour - Begin implementation of AR QR-Code tracking 	<ul style="list-style-type: none"> - Investigate Profile visualization w/ Zage - Begin implementing an AR basic profile using hard-coded data 	<ul style="list-style-type: none"> - Investigate QR-Code Tracking w/ Kevin - Begin implementation of AR QR-Code tracking 	<ul style="list-style-type: none"> - Investigate Profile visualization w/ Mariya - Begin implementing an AR basic profile using hard-coded data
Week 5 (Jan 29th - Feb 4th): Implement QR-Code Tracking & Hard-Coded Profile Visual [SEPARATE]			
<i>Kevin</i>	<i>Mariya</i>	<i>Nour</i>	<i>Zage</i>
<ul style="list-style-type: none"> - Finish implementing AR QR-Code tracking with pre-made QR-code 	<ul style="list-style-type: none"> - Finish implementing an AR basic profile using hard-coded data - Create google form (or some mechanism of taking user input) that asks a user for information about themselves and generates a unique QR-Code 	<ul style="list-style-type: none"> - Finish implementing AR QR-Code tracking with pre-made QR-code 	<ul style="list-style-type: none"> - Finish implementing an AR basic profile using hard-coded data - Create google form (or some mechanism of taking user input) that asks a user for information about themselves and generates a unique QR-Code
Week 6 (Feb 5th - Feb 11th): Combine QR-Code Tracking with Hard-Coded Profile Visual [COMBINED]			
<i>Kevin</i>	<i>Mariya</i>	<i>Nour</i>	<i>Zage</i>
<ul style="list-style-type: none"> - Work on linking the 	<ul style="list-style-type: none"> - Work on linking the 	<ul style="list-style-type: none"> - Work on linking the 	<ul style="list-style-type: none"> - Work on linking the

QR-Code Tracking with the premade QR-Code to the hard-coded profile	QR-Code Tracking with the premade QR-Code to the hard-coded profile	QR-Code Tracking with the premade QR-Code to the hard-coded profile	QR-Code Tracking with the premade QR-Code to the hard-coded profile
GOAL: MVP COMPLETE			
Week 7 (Feb 12th - Feb 18th): Work Out All Bugs in MVP & Grab User Inputted Data for Profile			
<i>Kevin</i>	<i>Mariya</i>	<i>Nour</i>	<i>Zage</i>
- Debug linking between QR-Code Tracking and visual profile (i.e. what happens if you scan multiple QR-Codes at once? How should the profile react?)	- Research how to pull inputted user information with associated generated QR-Code to the visual profile	- Debug linking between QR-Code Tracking and visual profile (i.e. what happens if you scan multiple QR-Codes at once? How should the profile react?)	- Research how to pull inputted user information with associated generated QR-Code to the visual profile
Week 8 (Feb 19th - Feb 25th): Polish QR-Code Tracking & Profile Creation from User Data			
<i>Kevin</i>	<i>Mariya</i>	<i>Nour</i>	<i>Zage</i>
- Finish debugging QR-Code Tracking	- Polish QR-Code tracking associated with user inputted data to create profile	- Finish debugging QR-Code Tracking	- Polish QR-Code tracking associated with user inputted data to create profile
Week 9 (Feb 26th - March 4th): Test our product & Integrate feedback before Demo Day			
<i>Kevin</i>	<i>Mariya</i>	<i>Nour</i>	<i>Zage</i>
- Test our product on classmates, receive feedback, and iterate design	- Test our product on classmates, receive feedback, and iterate design	- Test our product on classmates, receive feedback, and iterate design	- Test our product on classmates, receive feedback, and iterate design
Week 10 (March 5th - March 11th): Start Stretch Goals, i.e. Make Profile Interactive			
<i>Kevin</i>	<i>Mariya</i>	<i>Nour</i>	<i>Zage</i>
- Work on how to connect user profile to their associated LinkedIn	- Work on how to save someone's profile so you can view it later	- Work on how to connect user profile to their associated LinkedIn	- Work on how to save someone's profile so you can view it later
DEMO DAY (MARCH 13TH)			

Materials and any external help needed

The QR code tracking software we are thinking of using (as well as our backup) comes from Microsoft, and the backup we are considering is Vuforia, both of which are free. We may need to print QR codes out, but we have

access to free printing from the CS department. We may need some cloud computing resources or a simple database to host the user profiles and associations with QR codes.

Budget

Currently, we predict that our budget will be \$0. If this changes, we will seek approval.

Risks and how they will be addressed

Describe at least three major risks to your plan. For each one, categorize it as **low**, **medium**, or **high**, and describe mitigations -- if Plan A doesn't work, we will execute Plan B, etc.

Risk	Category	Mitigations
Safety of scraped/shared information	Low	This is less of an implementation risk and more of an issue with our user experience/design, as people could have concerns about their privacy or not want to consent to have their information appear in our application. Our mitigation to this is the design of our end to end experience, by requiring people to fill in some information to use the application we also have the opportunity to ask for consent and gives people the chance to filter out any information they don't want shown. Later, if we do something like LinkedIn parsing, we will still be using our initial consent model to ensure that only consenting parties have their LinkedIn scraped and shown.
QR Code tracking technology can be finicky, people have had issues in the past detecting QR codes	Medium	Our first mitigation would be to go from nametags to bigger QR codes, for the sake of the demo we might need to have people wearing a full sheet of paper or large image of the QR code. If we absolutely can't track QR codes, we might be able to do it with some simple image/object tracking (we could make every nametag have a different shape or image on it), and then use something like Vuforia to detect the images. This would limit the number of users and the amount of information we can get from the code, but is a good backup plan
Integrating user inputted information might be difficult or result in some latency/issues	Low	We need a way to get the user inputted information or scrape a linkedin profile. If this doesn't work or we have issues with internet connectivity, this could hurt the user experience. We also need a way to connect user profiles with their QR code, our initial plan is to have users grab a QR code and then input that QR code or number as they create their profile, building an association between the two. If we can't get it to work live, then we can also do some type of setup phase where everyone fills out their profile before putting on the headset and actually getting started.

