

# **AI for Accessibility Hackathon**

## **Post-Event Report**

June 30, 2021

# Executive Summary

The Talal and Madiha Zein AUB-Innovation Park in collaboration with Maroun Semaan Faculty of Engineering and Architecture, Faculty of Arts and Sciences, and Beirut Digital District hosted the AI for Accessibility Hackathon from May 24, 2021 till June 26, 2021. Sponsored by Microsoft and Mada Innovation Program and powered by Zaka and Beirut AI, this hackathon accepted 32 teams, with 100 participants, from 11 countries to present AI-based solutions for enhancing digital accessibility. These participants attended capacity building workshops, and went through semi-finals, and finals, to conclude the hackathon with 4 winners, and 3 additional teams qualifying to a grant by the FAS.

## Program Overview

### Background

The AI for Accessibility Hackathon was in collaboration with the Accessibility for a Bolder Learning Experience initiative, marking the 10th Global Accessibility Awareness Day. This event was aimed at rallying talents and fostering the regional development of the innovative entrepreneurship community related to artificial intelligence while also increasing social inclusiveness.

### Objectives

The hackathon's main objective was to push AI and accessibility enthusiasts from the MENA region to provide AI-based solutions for people with disabilities in one of these two tracks:

1. Assistive Technology
2. Physical Aid

### Methodology

The AI for Accessibility Hackathon took place at the following stages:

1. [Kickoff and Orientation](#) (May 24, 2021)
2. Applications Submission and Shortlisting (May 24, 2021 --> June 15, 2021)
3. Capacity Building Workshops (Technical, Business, Accessibility, and Soft Skills Workshops) (June 18, 19, 2021) [Day 1 and Day 2](#)
4. Semi-Finals Video Pitch Submission and Selection of Finalists (June 20, 2021 --> June 24, 2021)
5. Mentoring Sessions with Technical, Business, and User Experience Mentors (June 25, 2021)
6. [Hybrid Final Ceremony, Final Pitches and Winners Announcement](#) (June 26, 2021)

# Statistics

The Hackathon in Numbers:

1. More than **60 attendees** joined the Kickoff and Orientation on May 24.
2. **30 teams** with eligible ideas applied and got accepted to the hackathon with 100 participants from 11 countries.
3. **22 teams** submitted the semi-finals video pitches.
4. **13 teams** got accepted to the finals.
5. **4 teams** were announced as winners and **3 runner up teams** qualified to a \$10,000 grant provided by FAS.

71 semi-finalists joined from Lebanon (58), Syria (3), Algeria (3), India (2), Kuwait (1), Egypt (1), USA (1), UAE (1), Qatar (1).

46 finalists joined from Lebanon (33), Syria (3), Algeria (3), India (2), Kuwait (1), Egypt (1), USA (1), UAE (1), Qatar (1).

# Marketing

- [Kickoff Blog post](#)
- [Kickoff LinkedIn event](#)
- [Final Ceremony LinkedIn event](#)
- **Final Blog Post: To be released**
- Increased the [Talal and Madiha Zein AUB Innovation Park](#) LinkedIn followers by 25%

# Sponsors & Partners

## Sponsors:

Microsoft  
Mada Innovation Program

## Partners:

Beirut Digital District  
IEEE Lebanon Section  
Beirut AI  
Zaka

## AUB Partners:

Maroun Semaan Faculty of Engineering and Architecture  
Faculty of Arts and Sciences  
Accessibility for a Bolder Learning Experience (ABLE)

# Winning Teams

- **Wheely Wheel Team**

The team: Karen Kordab, Youssef Jaafar, Cyrine Soufi, Layal Tannous

Traveling the world in a more accessible and stress-free way was the vision that the team had. It was embodied in a revolutionary map. This map gives people with special needs the opportunity to navigate while being aware of places that are accessible to them depending on the type of their disability.

The Wheely Wheel team worked on a map that will include you wherever you go as it aims to provide a personalized experience for every person based on their needs and accessibility metrics. Its role involves featuring accessible places as well as motivating inaccessible ones to start an accessibility movement!

- **The Glens**

The team: Nijad AlDubayssi, Amine Berjaoui Tamhaz, Rafic Al Ayass, Frederic Aboud

A prosthetic arm that utilizes the power of AI to bring autonomous action capabilities is the next step in creating a more accessible world! It includes a camera that uses Computer Vision object detection algorithms to associate objects that can be grasped.

Execution of a full grasping process with minimal user input is now possible as the user provides a stop/continue myoelectric signal from the residual muscles of the forearm.

- **Reach Up**

The team: Hisham Ramadan, Mira Khaled

Have you ever wondered how an AI platform can change the way you approach learning? The team worked on developing an inclusive platform that allows for the delivery of online classes from the safety of students' homes while providing engaging as well as varied curriculums.

This is all empowered by monitoring progress through the AI platform that is configured for adapted learning.

- **أشرلي**

The team: Abdelrahman Abozied, Zainab AlMeraj, Rana Chams Bacha, Omar Bekdache

Ever thought of how you can translate Arabic sign language to text? Or have you thought of how that could support those with hearing impairments? This is a chance

for many people with such challenges to start living more independently with an easier way to integrate within the community.

The tool starts with an existing dataset that would be used to extract signs in frames while using them in training and testing a neural network model. Findings are evaluated with competent sign language translators that provide valuable feedback for enhancing the model.

**Three other teams were qualified for a 10,000 USD grant provided by the Faculty of Arts and Sciences, these teams are:**

- **Kanari AI:**

The team: Massa Baali, Ahmed Ali, Amir Hussein, Ryan Carmichael

Kanari AI's unique live Dialectal Arabic application could be used to transcribe and share meetings, presentations, and other conversations in real time with users via QR code. This live speech to text application allows those with hearing challenges to understand and enjoy the topics being presented.

- **Mighty Minders**

The team: Jack Khoueiry, William Salame, Joelle Georgeous

Mighty Minders proposed a hand sized device that will assist the visually impaired user through every task. It will replace their phone, their laptop, their TV, and even their walking stick, and more in the future that will make the user feel more and more less different.

- **Cortex:**

The team: Dhia Eddine Nini, Nabil Houari

Cortex is a software-based solution that uses AI tracking software through a 12hour period to assess executive function skills and ADHD. Cortex uses complex AI calculations through eye-tracking technology and how you use your computer throughout the day. Cortex provides a score and an accurate to life assessment in each skill, along with tailored recommendations. Cortex is used for ADHD and autism assessment, as well as a productivity assessment tool for career-oriented highly skilled professionals or trainers for kids in schools

## Recommendations

Based on feedback:

1. After the final ceremony, teams, organizers, and judges should have stayed and had a chat (Feedback by Judge Patrick Kazan)
2. "For finding AUB partners, I would definitely suggest using google forms instead of LinkedIn because not everyone is comfortable showing their names while publicly asking for help on a professional work platform in my opinion. The google forms method ensures that only the organizing committee would know the name and contact details for finding a partner. Any other form that gives some room to confidentially ask for a teammate is helpful in general. I also saw some hackathon events where the participant can send their CV to the organizing committee, and it will pick the suitable partner for them. This method encourages more people to participate including those who don't have a team or AUB partner yet. Also, for the teams who didn't win, it would be helpful to know the feedback of the judges by the end of the hackathon (if possible) and what they considered as weak points so that we can work on improving our solution for the future. For the workshops, they were amazing, and I would recommend to have breaks in between."
3. "The live pitch (4 mins) was very short for the teams, we had so much to say in a very short time. However, giving the teams more time will result in a longer hackathon, and thus the judges will get tired and then have a harder time to grade the teams."

## Testimonials

1. The A.I. Accessibility Hackathon introduced an engaging and riveting experience of knowledge acquisition with a drive toward solving complex problems!
2. "This hackathon changed my perspective of the world I live in. I found out a lot of people with special needs are not given attention. We need to show them we care about them, and we want to help them have better lives. Participating and winning this hackathon showed me that we have so much potential to make the world a better place to live in" - Youssef
3. I am proud and beyond grateful to have participated in this hackathon. It has helped raise my awareness on the need of inclusiveness and accessibility to the people who need it. It not only helped me become a more responsible citizen, but it has also aided me improve my communication skills, challenge

myself, gain new skills, and meet creative and inspiring innovators. It was truly a life changing event that I would gladly repeat all over again. -Layal

4. Karen: " This hackathon catered for a space that embodied in its essence a lot of creativity, innovation, and leadership. It has toppled the walls of conventional thinking and inspired us to think effectively, efficiently, and differently". And " What inspired me the most is their 'teach through action approach" which was reflected by including mentors with special needs. This reflected inclusivity, accessibility, and equality which were the hallmarks of this hackathon."

The banner features a dark blue background with white and orange text and graphics. At the top left, the AUB logo is accompanied by the text 'Talal and Madiha Zein AUB Innovation Park', 'Accessibility for a Bolder Learning Experience Initiative: ABLE', 'Maroun Semaan Faculty of Engineering and Architecture', and 'Faculty of Arts and Sciences'. The main title 'A.I. for ACCESSIBILITY HACKATHON' is in white and light blue. A vertical list of countries is on the right: Lebanon, Algeria, Syria, India, Qatar, UAE, USA, Egypt, and Kuwait. The central text 'Final Ceremony Recap' is in a white script font. Below this is a world map with orange location pins. The bottom section lists sponsors and partners: 'Sponsored by' (Microsoft, MADA INNOVATION PROGRAM), 'In collaboration with' (BEIRUT DIGITAL DISTRICT, IEEE Lebanon Section), and 'Powered by' (ZAKA, [BEIRUT AI]).

AUB  
Talal and Madiha Zein  
AUB Innovation Park  
Accessibility for a Bolder Learning  
Experience Initiative: ABLE  
Maroun Semaan Faculty of  
Engineering and Architecture  
Faculty of Arts  
and Sciences

Lebanon  
Algeria  
Syria  
India  
Qatar  
UAE  
USA  
Egypt  
Kuwait

*Final Ceremony Recap*

Sponsored by  
Microsoft MADA INNOVATION PROGRAM

In collaboration with  
BEIRUT DIGITAL DISTRICT IEEE Lebanon Section

Powered by  
ZAKA [BEIRUT AI]

## Pictures



أشرفي Team



Team The Glens





**Team Reach-Up**



**Team Wheely Wheel**



**Winners, Judges, Organizers**