Microsoft APAC AI for Accessibility "AI4A" Hackathon 2023
Student Pack

Problem Statements

"Nothing for us without us"

These problem statements have been contributed by Non-Profit organizations working in the field of disability inclusion. Themed around daily life, employment, communication, and education, these problem statements should be viewed as a base for your ideation to help trigger thoughtful projects. You are free to adapt them as per your own plans.

List of Sample Problem Statements:

Category: Daily Life
How can AI (artificial intelligence) be used to identify barrier-free routes for wheelchair users using satellite images, open-source maps and other possible image and data sources?
How can we make use of AI to help visually impaired people travel with confidence in the city?
How can AI help the blind travel by themselves, by notifying the accessibility requirements of the public constructions and/or obstacles on their way, especially those can't be detected by their white cane at the body and head level.
How can AI help create inclusive ATMs (Automated Teller Machines)?
How can AI help visually impaired people use photo editing apps independently?
How can AI help people with visual impairment safely manipulate cooking appliances and equipment (e.g., gas stove, blender, etc.)?
How can AI provide wearable devices that will help people with visual impairment traverse the streets independently and safely?
How can AI help people with visual impairment in personal grooming (e.g., correct color combination in clothes, hair style that matches the facial features, etc.)?
How might we automatically create image descriptions in social media for people with visual disabilities?

Category: Employability
How might we use AI to search for and match jobs and training opportunities for people with disabilities based on their profiles and career aspirations, and informing them of such matches via a user-friendly and accessible platform? How can we further make use of AI to build, update and customize their resumes such that the resumes would be relevant to the jobs that these job seekers are applying to (for e.g., use of industry-specific terms)?
How can AI be used to train people with disabilities to be proficient in online job interviews (For e.g., video conferencing etiquette and understanding of facial expressions.)?
How can AI create wearable technology to help people with visual impairment navigate their workplaces independently? How can assistive technology for Persons with Disability improve safety and reduce occupational hazards in the workplace?
How can AI provide instantaneous accessibility for remote office applications such as those used for collaboration?
How can AI provide accessibility for online applicant assessment tools such as language assessments, verbal reasoning tests, and abstract reasoning tests?

Category: Communication
How might we use AI to create a better video-conferencing experience for persons with visual impairment (e.g., to "read" facial expressions, identify who's speaking in a video conference etc.)?
Ahead of meltdowns, many people with autism will show signs of distress. How can we help children with autism to feel calm from emotional distress and be able to reengage with others?
How might we automatically create closed captions for offline use to help the deaf and hard of hearing community?
How might we automate speech therapy for children with speech disabilities using AI?
How can AI be integrated into an online communication or conference platform to accommodate and support people with communication and hearing impairments?

Category: Education
For a student with visual impairment, how might we use AI to recognize, organize and describe information accurately in a document that comprises text and graphics that do not have alternate text descriptions and are not arranged sequentially, in a manner that makes sense to the student? Typical screen readers require a certain sequential format of content layout and alternate text descriptions of graphics to capture and read out the information accurately.
How might we make online learning more accessible to learners with disabilities, especially from rural communities?

The Final Presentation

Judging criteria

To choose 1 winner per country

Microsoft APAC AI4A hackathon final presentation to a panel of judges from technical and non-technical fields.

Winning teams will be evaluated on 5 core criteria:

- **Attention to the needs of users with disabilities**: Should demonstrate a deep understanding of the accessibility needs of their target users and should be designed to meet those needs in innovative and effective ways.

- **Creative solutions**: The projects should demonstrate creative, original thinking and a willingness to take risks in pursuit of making a real difference for users with disabilities.

- **Technical proficiency**: Use of Microsoft cloud tech, AI, Cognitive services.

- **Real-world impact**: The projects should show potential for real-world impact and demonstrate a clear understanding of the challenges, stakeholders, and business models involved in bringing assistive technology solutions to market. Commercial plans for launch and expansion should be included.

- **Presentation and communication skills**: The students should be able to effectively communicate their ideas and present their projects in a clear, concise, and engaging way.

The final presentation needs to be in the form of a group presentation, where team members showcase:

- The idea
- Proposed technology
- Go-To-Market plan

Each team (maximum of 10 per country) will be given 10 minutes to present followed by 5 minutes of Q&A (Questions & Answers) from the judges.

What do winners get?

- Exclusive for winners only - one day online Meet the Experts training on

    - Cloud Fundamentals

    - Open AI and Chat GPT with MSFT AI Experts

    - Cybersecurity

- Champions certificate of winning from Microsoft

- Social showcase on Microsoft LinkedIn, blogs

- Customized mentoring session with Microsoft leader as per your career needs

- Dinner with Country Senior Leadership which will give you an opportunity to connect and learn.

- Azure for students [Azure for College Students](#)