

TECHFEST 2023-2024

TechAid: Innovations for Inclusion

The aim of TechAid: Innovations for Inclusion is to enhance accessibility, independence, and overall quality of life for people with disabilities. By developing innovative solutions across various verticals, the goal is to address specific challenges and barriers faced by differently-abled individuals in their daily lives. In this competition, we challenge participants to think creatively and develop groundbreaking solutions across a spectrum of verticals.

Vertical 1: Mobility Assistance

Problem Statement: Many individuals with physical disabilities face challenges in achieving mobility and navigating their environments independently. The problem lies in developing technologies that can provide efficient and customizable mobility assistance to cater to individual needs. This includes designing advanced prosthetic limbs, powered wheelchairs, exoskeletons, and other assistive devices that offer enhanced manoeuvrability, comfort, and adaptability to different terrains.

Vertical 2: Communication and Accessibility

Problem Statement: People with speech or communication impairments require effective and accessible communication tools. The challenge is to develop augmentative and alternative communication (AAC) devices that are intuitive, portable, and capable of adapting to individual communication needs. These devices should provide options for different communication modes, such as text, symbols, or speech generation, and ensure seamless integration with modern technologies like smartphones and computers.

Vertical 3: Sensory Support

Problem Statement: Individuals with sensory impairments, such as visual or hearing impairments, face barriers in accessing information and participating fully in society. The problem is to create technologies that enhance sensory support, such as advanced hearing aids with noise cancellation and speech enhancement, visual aids with object recognition and navigation assistance, and tactile devices that provide haptic feedback for the visually impaired. These technologies should aim to bridge the sensory gap and promote equal opportunities for differently-abled individuals.

Vertical 4: Cognitive Assistance

Problem Statement: People with cognitive disabilities may require assistance in various aspects of daily life, including memory retention, task management, and decision-making. The challenge lies in developing technologies that provide cognitive assistance, such as wearable reminders and prompting systems, cognitive training software, and applications that simplify complex tasks. These technologies should be user-friendly, adaptable to individual needs, and capable of promoting independence and self-confidence.

Vertical 5: Accessible Information and Services

Problem Statement: Differently-abled individuals often face barriers in accessing information and services due to inaccessible formats or physical limitations. The problem is to design technologies that ensure the availability of accessible information, including websites, documents, and multimedia content, through methods such as screen readers, captioning, and alternative formats. Additionally, developing platforms and systems that enable easy access to services like education, healthcare, employment, and social participation is crucial for inclusivity.

Vertical 6: Inclusive Gaming and Entertainment

Problem Statement: Individuals with disabilities often encounter limited access to gaming and entertainment experiences due to physical or sensory limitations. The challenge is to develop inclusive technologies and adaptations that enable differently-abled individuals to engage in gaming, virtual reality, and entertainment activities. This includes designing accessible controllers, adaptive interfaces, and immersive experiences that accommodate various disabilities and ensure equal enjoyment and participation.

REPORT FORMAT

- Title
- Abstract
 1. Objectives
 2. Beneficiaries (For Whom)
 3. Value of Results (Usage)
- Background
- Statement of Problem
 1. Succinct definition of problem addressed (follows from material in the background section)
- Research
 1. Present Methods of tackling the problem (if any)
 2. Proposed Solution
 3. Alternate solutions/approaches
 4. Novelty of Approach: How is/will your solution be better than the existing products that address the same problem?
- Technical Report
 1. Description of concepts, theories and/or approach involved in the proposed solution
 2. Technical aspect of the proposed solution
 3. Detailed technical specifications and pictorial representations (block diagrams/ flow chart)
 4. Description of the flow of operations demonstrating key features and functionality
 5. Performance estimate of the solution
 6. Experimentation/Verification done to establish the workability of the above

7. A link to the video of the working model/ prototype
- Results
 1. Actual findings, significant output of tests and analysis (Must be readable)
 2. Include problems encountered, credibility of results, accuracy estimates
 3. Pros and cons of your solution
 4. Utility of results
- A link of the Google Drive Folder which contains Pictures and Video of the working model/ prototype.
- Application
 1. Your idea as a solution to the problem
 2. Additional applications
 3. Benefits to the users
- Future prospects, research in it and further development (in brief)
- Any other details: (Patent/Business plan etc.)

ELIGIBILITY

- Individuals or teams from the following categories are allowed:
 1. Students/research scholars of authorised institutions (students have to show their Valid College/School ID)
 2. Upto 3 years old college pass-outs.
- A team is allowed to have a maximum of 4 members.
- If the participating team feels that their idea requires more participants in their team, they can forward their request, with suitable reasons, to techaid@techfest.org with the subject "Ideate TechAid: Team number increase request"

EVALUATION

1. **Creativity and Novelty:** How novel is the idea? How different is it from the current solutions available? The innovation must be ingenious and novel in its area of application and should have a high potential for leaving an impact on the society.
2. **Originality:** The innovation should not, by any means, include copied or stolen work. Such applications will be disqualified immediately.
3. **Performance**
4. **Cost/Market Value and Acceptance**
5. **Durability and Usability:** Durability of the prototype/method proposed.
6. **Implementation Ability:** Is the solution implementable as described? Is it repeatable? Is the solution feasible for diverse and changing conditions?
7. **Scalability:** Is the solution scalable to a higher level, how easy is it to scale up and what are the factors affecting it?
8. **Potential of Impact:** How does it benefit society? The scale of problem that it solves, intensity of the solution and number of people catered from the solution directly and indirectly.

9. **Design:** Has the design been taken into consideration? How optimised is the product?
10. **Ergonomics** (if a team decides to make a well-designed product) In case of any discrepancies, the decision of the Organizers or Judges will be final and binding

SHORTLISTING

Top 15 teams will be selected and will get the chance to present their model/idea in the Final Round of TechAid: Innovations for Inclusion at Techfest, IIT Bombay. Participants will get a slot for presenting their model/idea to the Judges based on which they will be evaluated. These teams will be selected by a panel of judges.

GENERAL RULES

1. Every team has to register online on our website for the competition. A Team ID will be allocated to the team on registration which shall be used for future references.
2. A team can register at any point of time before 30th October 2020 and submit the final abstract and video (as mentioned in the structure).
3. The decision of the organizers or judges shall be treated as final and binding on all. Techfest has all the rights to verify the identity and accuracy of the details provided by the participants.
4. No responsibility will be held by Techfest, IIT Bombay for any late, lost or misdirected entries.
5. The idea presented by the teams should be original (not protected by means of patent/copyright/technical publication by anyone else).
6. Note that at any point of time the latest information will be that which is on the website. However, registered participants will be informed through mail about any changes on the website.
7. All modes of official communication will be through the Techfest e-mail.

REGISTRATION AND SUBMISSION

The Participants have to register on the official Techfest Website and fill all the necessary details. www.techfest.org ->Competitions-> Ideates ->TechAid: Innovations for Inclusion -> Explore More -> Register -> Fill all your details - > Now you must create/Join a team.

ABSTRACT SUBMISSION

Teams are required to submit one report to techaid@techfest.org . This report should contain the idea they are looking forward to working on.

PROJECT REPORT SUBMISSION

The project report should be mailed to with the subject 'TechAid' Project Report: (for e.g. Ideate: TechAid' Project Report: ID). The report must be submitted in PDF format only mailed to techaid@techfest.org

CERTIFICATE POLICY

Only those teams that are shortlisted for the finals and also give a final presentation about their work during Techfest 2023-24 would be awarded an e-Certificate of Participation. The top 5 entries from this event would be provided with a Certificate of Excellence.

PRIZES

The prize money will be awarded to top 3 winners via NEFT and will be processed within 30 working days after receiving the prize money from sponsors. Winners have to mail the following information (immediately after the announcement of results) to akshat@techfest.org

FORMAT OF MAIL:

Subject: TechAid: Innovations for Inclusion, Team_ID - Position - (example- TechAid: Innovations for Inclusion, FR191003 - 3 rd Position)

Body of mail:

1. Account Holder's Name
2. Account Number
3. Bank name and Branch name.
4. IFSC Code

TIMELINE

Last Date of Registration	10th November 2023	Participants need to register before this date
First Project Report Submission {Abstract Submission}	10th November 2023	Submission of First Draft Report
Final Project Report Submission	13th November 2023	Submission of final project report along with video prototype has to be submitted before this date
Declaration of Result	20th November 2023	Declaration of shortlisted teams to work for final project reports
Improvisation Stage	20th November to 15th December 2023	Shortlisted participants are to improve upon their model and prepare a presentation for the final round.
Final presentation & video submission	15th December 2023	Participants have to submit the final video of the prototype and presentation to be displayed during the festival before this date
Presentation Stage	27th December 2023	Final presentation along with a demonstration of the working prototype
Exhibition	27th December 2023	Techfest would give an opportunity to teams selected by judges to exhibit their projects

