



DigiEduHack Solution

**Monterrey - DigiEduHack Tec de
Monterrey 2021**

**Challenge: Monterrey - DigiEduHack
Tec de Monterrey 2021 Challenge 2021**

Web app for identification of students with autism through profile data analysis and machine learning



Web app for teachers to identify students profiles

Due to the lack of training of both educational personnel and medical personnel for the adequate detection and monitoring of ASD, a solution is provided that supports teachers to identify students with this profile and exhorts them to take action based on general standards.

Team: Power hack girls

Team members

Bella Perales, Andrea Salcedo y Leyre Carpinteyro

Members roles and background

Bella Perales - ITC, Activist women in stem

Andrea Salcedo - IRS, participant in robotic challenges

Leyre Carpinteyro - IDM, codelegate in math olympiads

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Solution Details

Solution description

Our web application supports teachers in the detection of students with a possible autism profile. When detected, the application provides recommendations to the teacher on how to give adequate general follow-up, both to teach their classes and to address parents, contributing to an inclusive education that makes diversity visible. The success will be reflected in the statistics of each educational institution with respect to inclusion in the classroom, as well as the increase of people with autism in the working world. It will help to make educational institutions more inclusive and safe spaces for all people, as well as provide a guarantee of having a staff that can be better trained in this area.

Solution context

In Mexico there is still a marked discrimination and invisibilization of neurodivergent people, mainly at an early stage because it is the manifestation of the first signs of the spectrum. This results in a lack of early detection and better conditions for the development and learning of the person.

Solution target group

Our target group consists of educational institutions and teachers.

Solution impact

Our impact will be:

- Support in the early detection of a person with ASD.
- Visibilization of neurodivergences in the classroom.
- Guidance to educational staff on how to provide adequate follow-up to their students with this disorder.

It will be reflected in educational statistics, showing more inclusive institutions, as well as better performance of students with this spectrum.

Solution tweet text

Profiles is the web app that helps teachers and schools to identify the students profiles in order to detect who could have autism and how to follow up according to general standards.

Solution innovativeness

Our solution contributes to the visibility of neurodivergences within schools, rather than limiting them to the individual with the spectrum. In addition, there are no applications designed for teachers that support the identification of profiles based on patterns that can be detected in the student's behavior.

Without forgetting that in Mexico there is not enough information in this field, so we believe and trust that the web application would contribute to the generation of data and statistics that encourage research, deepening and promotion of neurodivergences in order to generate more inclusive space.

Solution transferability

The web application can be expanded in the detection of different neurodivergences such as ADHD, bipolarity, among others. This thanks to the implementation of databases and machine learning that offer the possibility of expanding the profiles that can be identified and the probability that said diagnosis is correct.

Solution sustainability

The web application would be implemented in Mexican elementary schools since it is one of the critical moments of the child's educational training. However, it is planned to increase the market to preschool schools by implementing image recognition software which can compare pictures and from there give a diagnosis. There will be 3 plans, the basic plan, pro plan and luxury which provide different amounts of profiles: 200, 500 and unlimited respectively. In addition to collaborating with student groups such as the Autistic Student Group at Tecnológico de Monterrey and with organizations such as Arena to improve outreach to people with these disabilities.

Solution team work

The team is made up of 3 women from different careers and with diverse experiences, with jobs in machine learning, programming and robotics. In addition to not only focusing on their careers, we also have experience in dealing with children and their teaching in areas such as mathematics, programming and robotics, which gives us an approach to both the student and the teacher's position. However, this does not remove the fact that there must be collaboration with experts in the area to be able to develop and implement the measurable aspects of each profile in the database and machine learning and to corroborate the diagnosis that the web application gives us.