



# AUTISM 2023 HACK-A-THON

April 19<sup>th</sup> and 20<sup>th</sup>

Bring FSI developers together to demonstrate how innovative Microsoft technologies can transform autism services for profound autism by tackling real world use cases provided by families and creating lasting open-source projects for the community.

**2**

**DAYS**

**70+**

**DEVELOPERS**

**5**

**USE CASES**



# HACKATHON HISTORY

The autism community has a great need for digital transformation. The promise of technology innovation for the autism community is so compelling, but investment has been slow. The goal of the Autism Hackathon is to demonstrate how technology can be transformative for the autism community by bringing together the digital transformation expertise of Microsoft, the technology prowess of financial services developers, and the autism treatment expertise of partners. Over two full days, teams will develop demos and prove out concepts specified in four use cases, based on the real needs of parents, practitioners, and experts in autism.

## 2023 USE CASES

### **Use Case #1:** IoT Data Collection

Dynamic programs require adaptations to data collection which are not supported by these systems. In the end teams frequently resort back to pen, paper, and mechanical devices such as hand tally counters. Can we take a different approach to this problem using an IoT pattern?

### **Use Case #2:** Transform Learner Analysis with Video and AI

Data collection is essential to successful outcomes for learners, but analysts are missing one of the most critical pieces of data. This use case looks to develop a platform to capture this information, integrate it with data from other sources, and enrich analysis with AI.

### **Use Case #3:** Using ML to Transform Learner Outcomes

There is a long-held belief that each individual case of autism is so unique that comparisons cannot be drawn to other cases, but marketing companies are able to use data to target the right message to us at the right time to sell their product. Can we use therapy data to transform outcomes for learners using modern technology and methods?

### **Use Case #4:** HoloLens Skills Training

Unemployment for those with autism is significant and support in the work environment is limited. The use case will use HoloLens augmented reality to help with basic job skills by presenting a visual cues on how to complete task such as stocking shelves or preparing food.

### **Use Case #5:** Metaverse Social Practice

Developing social relationships with peers can be one of the biggest challenges for people with autism, despite a strong desire to form them. The Metaverse offers an opportunity to practice social interactions in a fully immersive environment. This use case will lay the groundwork for a social interaction in the Metaverse between a subject and an AI generated peer.

# HOW TO GET STARTED

If you are interested in participating, please reach out to your team lead or Hackathon organizers **Leo Junquera** ([leo.junquera@ey.com](mailto:leo.junquera@ey.com)) and **Brigit leuter** ([brigit.leuter@microsoft.com](mailto:brigit.leuter@microsoft.com))! We will share the latest information on registration, dates, and upcoming learning sessions. Once registered, you will be assigned to a use case and a team! Leading up to the two-day Hackathon, you will be provided with a variety of training materials, as well as access to our use case technical leads so that you can be prepared to hack! For more information, please read on to our FAQs section.

## LEARNING

### Quick Facts on Autism

<https://centralreach.com/autism-quick-facts/>

### Quick Facts on Applied Behavior Analysis (ABA)

<https://centralreach.com/applied-behavior-analysis-quick-facts/>

### Introduction to Problem Behavior

<https://www.youtube.com/watch?v=rB65QnVkKjw>

### Azure Fundamentals: Core Concepts

<https://docs.microsoft.com/en-us/learn/paths/az-900-describe-cloud-concepts/>

### Azure Fundamentals: Azure Services

<https://docs.microsoft.com/en-us/learn/paths/az-900-describe-core-azure-services/>

### Azure Data Fundamentals

<https://docs.microsoft.com/en-us/learn/paths/azure-data-fundamentals-explore-core-data-concepts/>

### HoloLens: Introduction to mixed reality

<https://docs.microsoft.com/en-us/learn/modules/intro-to-mixed-reality/>

# FAQs

## **How do I register and when do I need to register by?**

Registration will open mid-February and close 2 weeks before the event start date. Please reach out to us and we will share the registration details!

## **Will the event be remote?**

This will be a hybrid event with the in-person portion held in New York City (exact location to be announced). Upon registering, you will have the option to indicate "in person" or "remote" as your preference.

## **I would like to attend in person, is there anything else I need to do?**

For those that indicated "in person" during registration, we will follow-up with details on everything you need to know. You will be responsible for bringing your own lap top!

## **Will I be able to choose which Use Case I'm assigned to?**

You will be asked to rank your use case preference upon registration. Each year, we do our best to assign participants their first choice. In some cases, you may be assigned your second choice.

## **Can a group of individuals request to be on the same team?**

Yes. While we encourage participants to allow us to place you on teams for the chance to connect with others outside your organization, you may reach out to us if you already have a group within your organization that would like to work together.

## **Will we be able to do any hacking in advance?**

We encourage you to begin collaborating with others and your tech leads as soon as you would like! We aim to provision the sponsored Azure subscriptions during the week leading up to the hackathon so that you can further prepare work on your use case.

## **What type of training material will I have access to?**

We will provide a technical training guide with learning paths covering pertinent technologies for each of the use cases. We will also provide a training schedule with live sessions including a family roundtable, the state of autism technology, 'ask me anything calls', and more!

**WE HOPE TO SEE YOU THERE!**