

**Special Session Proposal**  
**15<sup>th</sup> International Conference on Social Robotics**  
<https://icsr23.qa>

**1. Title:** Robotic and Smart Solutions for Children with Autism and other learning disabilities

**2. Organizers:**

**Session Chair:** Uvais Qidwai, [uqidwai@qu.edu.qa](mailto:uqidwai@qu.edu.qa)  
Professor of Computer Engineering, Qatar University

**Session Co-chair:** John-John Cabibihan,  
Professor of Mechanical Engineering, Qatar University.

**3. Session Description and Objectives: Please write a detailed description of the content and objectives of your session.**

Autism Spectrum Disorder and other learning disabilities are becoming more and more in numbers in a number of countries in the world. Qatar is one of those countries that has champion the cause of improving the quality of life for children with ASD and other learning disabilities. A large number of institutions all over the country as well as global initiation of Autism Awareness Day every year in April under the UNO umbrella.

This session is intended to share experiences with hands-on activities related to the use of technology, specifically robotics and intelligent devices, for better treatment, better learning, and improving the quality of personal and social lives of children with ASD and/or other learning deficiencies. It has been reported over many years that robotic or similar smart technologies can help in enabling these children to overcome their fears and impediments through regular personalized interactions and learning routines. The main issues with such kids are related to social interactions, focus and retention during the learning sessions, as well as response times and recall from previous sessions. A variety of solutions have been tested and some of them will be presented.

**4. Intended Audience and Plans to Solicit Participation: Please explain who your intended audience is, plans to solicit participation, and how you plan to encourage discussions and exchanges between the participants of your session.**

The session is open for all interested people in the subject. Specifically, engineering students, professionals from special needs, faculty and staff from engineering, education, and sports sciences.

Workshop advertisements will be sent out to various mailing lists and social media platforms.

**5. List of Topics: Please provide a bulleted list of the topics of interest that will be covered by the session.**

1. Autism and Learning disabilities: where are the voids? [Ms. Olcay Connor]
2. Review of various techniques and devices being used for assisting children with ASD in their learning.
3. Furhat Interactive Robots with Demo.
4. NEC Robots (online presentation + case studies)
5. Robotic Toys for children with ASD and their impact. [Prof. John-John Cabibihan]
6. Wearable devices for monitoring temperament and mood swings for children with ASD.

Hands On Sessions:

1. The game of multiple information sources.
2. Display of various robotic tools used for treatment and teaching kids with special learning needs.
3. Comparative display of conventional vs. Robotic devices.

Panel Discussion:

A general panel discussion will constitute the last part of the workshop where newer challenges will be identified and possible directions for solutions will be discussed, possibly resulting in future publications.