

# Interaction Design



Human Robot Interaction

## Applying Human Robotic Interaction to Attention Disorders

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# Introduction

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## ADHD/ Autism:

Attention Deficit Hyperactivity Disorder is an impairment of either activity or attention control or both. The problem presents as a child who is always on the go, does not settle to anything, has poor concentration, poor ability to organize activities or to engage in tedious activities or tasks requiring sustained mental effort, or who cannot stay still and cannot wait for others.

Autism is a lifelong developmental disability that affects the way a person communicates and relates to people around them. It is a neuro developmental disorder...primarily characterized by developmental difficulties in Verbal and Non- Verbal communication, social relatedness and leisure and play activities.

It is observed that among autistic kids the ability to interact socially is quite less. They avoid social contact and prefer machine contact.

It is seen that autistic kids are more inclined towards machines as compared to humans. Autism is a spectral disorder and is one of the ADHD's.

## Human Robotics Interaction:

As advances in technology continue, people with disabilities are benefiting from it.

Human-robot interaction (HRI) is the study of interactions between humans and robots.

Apart from its industrial perspective robotics is slowly entering social life.

Social robotics is turning to be a new field in itself. As robots enter our lives more and more understanding of the interactions between humans and robots needs to be understood.

## Applying Robotics to help ADHD:

A few projects worldwide seek to include robots as a part of therapeutic regimen for individuals with autism. The use of social robots to diagnose, treat and understand autism is being researched around the world.

It is observed that autistic kids are comfortable towards interacting with robotic toys or any mechanical toy as compared to humans.[How Social Robotics will help diagnose treat and understand autism]

They can identify patterns among randomly moving objects easily.

# The Design

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## The Context:

To seek the application of robotics to aid Autistic users.

## What is it?

It is a toy robot that moves on its own around a given space. The ability of the robot to move on its own makes the robot look more human like. Yet it is a toy which is

## How it works?

The robot works randomly using random generation formulae. The random generation formulae control the wheels of the robot in all possible directions. The motion of the robot is completely random and is not controlled.

## Value/ Potential

Whenever in active play the robot is seen by the kids, its actions create new patterns. Autistic kids may have a keen interest in looking at these patterns and hence generating concentration. This concentration can further be upgraded by making the robot look more and more social. Hence acting as a tool to assist autistic kids for social behavior.

The use of random motion is enormous, and can be used in many applications. The random function can be modified to bring different results. The activities with randomness can be actually interactive also. The random no function which is now software based in future can also be a direct input from sensors to produce actions of the robot based on random inputs and hence identifying patterns in real time.

## The Context:

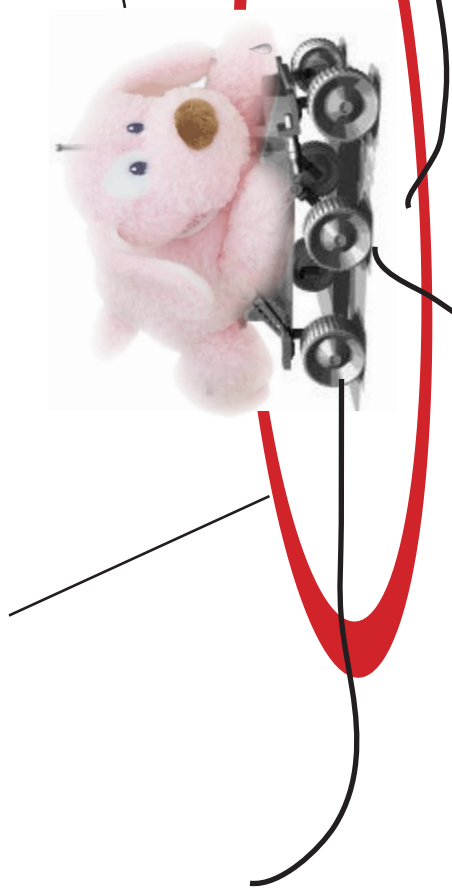
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# Ideation

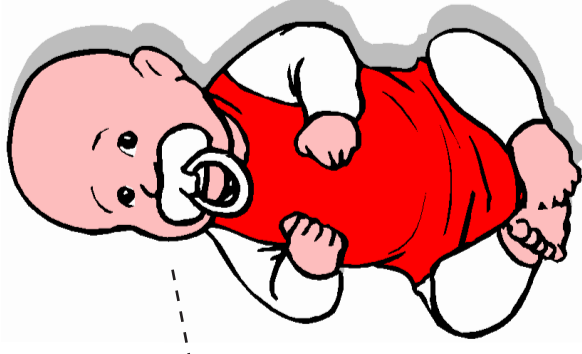
## Idea 3

Therapeutic treatment for autistic kids using robots which move in random motion.

If someone comes close to the toy or if it goes close to the walls the toy is able to change its path on its own.



A robot that moves around in random motion. It gives a feeling of real life. Yet it is mechanical, hence close to reality but yet an artificial look.



The toy can be remotely switched on and off by the teacher or parent as they monitor the kids

# About Me



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