

# Neural Networks in Reasearching and Improving ASD Symptoms

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CERC 2022  
Thursday 12<sup>th</sup> May, 2022

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# Abstract

- ❑ A condition that needs a lot of care, autism is largely misunderstood, especially at a young age. Imagination of children with ASDs is captive with no way to be expressed, having difficulties in developing an understanding of spoken language so they resort to nonverbal communication.
- ❑ This research paper aims to study patterns in cognitive behavior of people with ASD to see if we can facilitate them with better means of education through Game Theory. To support the research we implemented neural networks to see if/ how much people with ASDs can benefit from such an approach. By developing a program like this we want to also help medical professionals with a better understanding of them. Besides this, the program can help in improving their communication skills /and find a better way to communicate ideas and emotions.

# Key Words

- ☐ Autism Spectrum Disorder
- ☐ Children
- ☐ Communication
- ☐ Artificial Intelligence
- ☐ Game Theory



# Autism

Autism spectrum disorders (ASD) are typically characterized by difficulties in communicating and forming relationships with other people. This is often misunderstood, slowly developing and accumulating frustration that can eventually be released in an unhealthy manner, fact that leads to rigidity, anxiety and even depression when it comes to social interactions. ASDs have a negative effect on children's developing education, their goals and strategies to accomplish them. There is a set of seven features of individuals with autism and these are: (a) inability to relate themselves to people and situations, (b) poor language development, (c) echolalia, (d) excellent rote memory, (e) perseveration and repetitive behavior, (f) anxiously obsessive with sameness, (g) good cognitive potentialities and generally normal appearance. Individuals and groups of children with autism spectrum disorders have distinct developmental patterns. Many children with ASDs have relative strengths that they might use to supplement their learning in areas where they struggle. A child with great visual-spatial abilities, for example, might learn to interpret words to cue social conduct. Tasks having a clear finish or that demand thought about how to get from one point to another may encourage a child with good nonverbal problem-solving skills.

# Conclusion

## References

1. Educating Children with Autism – Catherine Lord and James P. McGee
2. Teacher Needs for Educating Children with Autism Spectrum Disorders in the General Education Classroom – Kim Finch, Robert Watson, Cynthia MacGregor, Natalie Precise
3. <https://www.nationalelfservice.net/learning-disabilities/autistic-spectrum-disorder/video-games-autism/>



