A 3D Serious Game for Improving Social Skills of Children with ADHD via Multimodal Rythm-Centric Exercises

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What is ADHD & How Music Therapy helps

- ADHD Symptoms
  - Inattention
  - Impulsivity
  - Hyperactivity

- Social Disfunctioning
  - Isolation
  - Low self-esteem
  - Depression

- 1 out of 9 children has ADHD (11%)

- Music Therapy Increases
  - Maintenance of focused attention
  - Sense of structure, limits and rules
  - Development of cognitive ability
  - Self confidence
  - Social skills

Collaborative Rhythm-Centric
Game to Improve
Psychosocial Functioning
ADDventurous Rhythmical Planet: Story & Interface

Game Story
• Alien crushed with her spaceship in foreign planet
• Players need to retrieve the pieces of the spaceship, repair it, and continue their journey
• Craters exchange rhythmic plays for spaceship pieces

Game Play
• Single-user mode: Learning basic rhythm concepts
  - Focus attention, Channel excess energy
• Multi-User mode: Players collectively reproduce rhythm
  - Communicate, Synchronize

Result
• Motivation for socializing
• Improvement of overall mental health and self-confidence
What is ADHD & How Music Therapy helps

Architecture of the Game

Player produces a rhythm

Request for a specific rhythm

Interface Interacts

Evaluate the percentage of correctness of the rhythm

Unity Server

Database

DrumID

timeOfKnock

Loudness (%)

Piezoelectric transducer

ESP8266

John Papatzanis
Thank You!

- Any questions?