



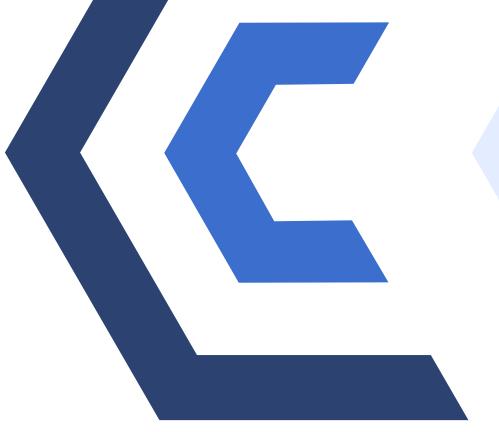
DHYAN- AI Powered Robot for Visual and Audio Sensing

Supervised By: Dr. Muhammad Hanif

Faculty of Computer Sciences and Engineering
Ghulam Ishaq Khan Institute of Engineering
Sciences and Technology, Pakistan

Table of Contents

Team Members	01	Proposed Solution	06
Introduction	02	Methodology	07
Motivation	03	WorkFlow	08
Problem Statement	04	Scope and Potential Users of System	09
Literature Review	05	Thankyou	10



Team Members

- | | |
|------------------------|-----------|
| 1. Qasim Ali | - 2022414 |
| 2. Ali Raza | - 2022664 |
| 3. Malik Abdullah Awan | - 2022274 |
| 4. Sara bint bilal | - 2022529 |





Introduction

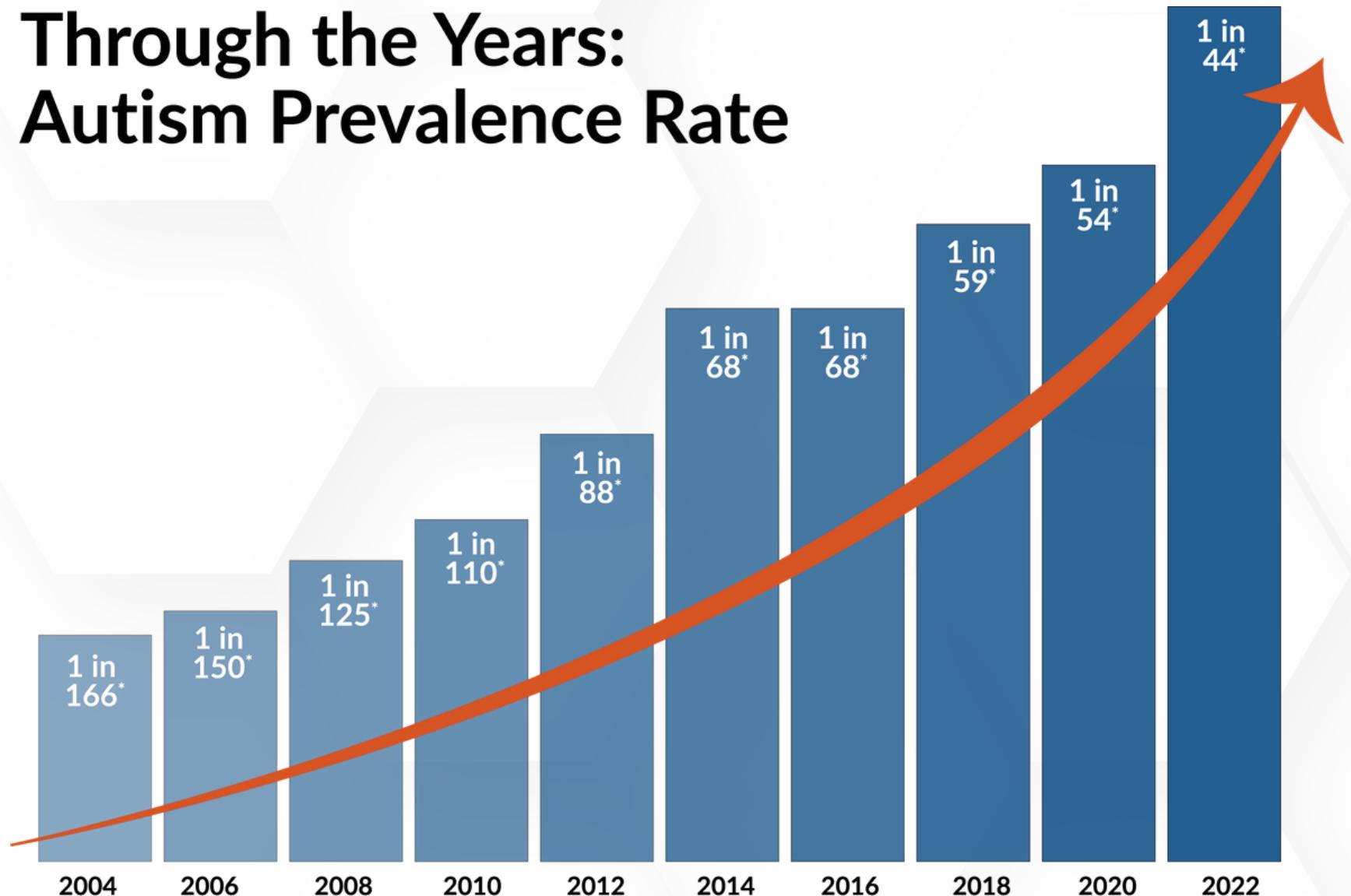
- What is autism?
- Autism Spectrum Disorder (ASD) is a neurodevelopmental condition that affects communication, social interaction, and behavior.
- Approximately 61.8 million individuals were on the autism spectrum globally in 2021*

*-[http://thelancet.com/journals/lanpsy/article/PIIS2215-0366\(24\)00363-8/fulltext](http://thelancet.com/journals/lanpsy/article/PIIS2215-0366(24)00363-8/fulltext)



Motivation

Through the Years: Autism Prevalence Rate



*Centers for Disease Control and Prevention prevalence estimates are for four years prior to the report data.

- Rising autism cases in Pakistan and globally. [1]
- Lack of specialized therapists.
- High treatment costs



[1] <https://minutemirror.com.pk/not-a-single-teacher-training-school-for-400000-autistic-children-in-country-3615/>

Problem Statement

- Autistic children in Pakistan lack access to affordable and engaging therapy sessions. [2]
- Due to different behavior, not all children adapt to the therapy sessions quickly.
- Most support is limited to urban centers. [3]



[2] <https://scientiamag.org/the-challenges-of-pakistani-parents-of-autistic-children-a-double-edged-sword/>

[3] <https://tribune.com.pk/story/2559970/autistic-children-lack-support-in-k-p>

Literature Review

Robot Name	Introduction / Launch Year	Key Features	Benefits	Limitations
Buddy (Blue Frog Robotics)	2015 prototype; commercial 2019–present	Voice, touch, LED expressions, movement, remote control, programmable “apps”	Playful, engaging, multiple modes, purchase & rental options	Costly, maintenance needed, effectiveness depends on software quality and trained use
Moxie (Embodied Inc.)	Announced 2020, updated 2023–2024	Small (~14-inch), AI conversations, games, face/emotion recognition	Reduces isolation, supports emotional and social skills	Requires supervision, privacy/data concerns, may not fully replace human-led therapy
TimTim (Pakistan)	Revealed 2024 (local launch)	Bilingual (English & Urdu), audio/video interaction, walking/talking, 7-hour battery, AI engagement	Locally built, designed for autistic children, improves engagement & reduces isolation	Limited to two languages, unclear cost, early stage, unknown long-term data
HAN – Social-Skill-Teaching Robot	2025 (James Dyson Award project)	Dual screens, role-play, expressive visuals, multimodal sensors, fine-tuned large language model	Innovative multimodal approach, aims to improve emotion understanding and practice social interactions	Prototype stage, unclear scalability, cost, long-term impact, cultural/language adaptation needed

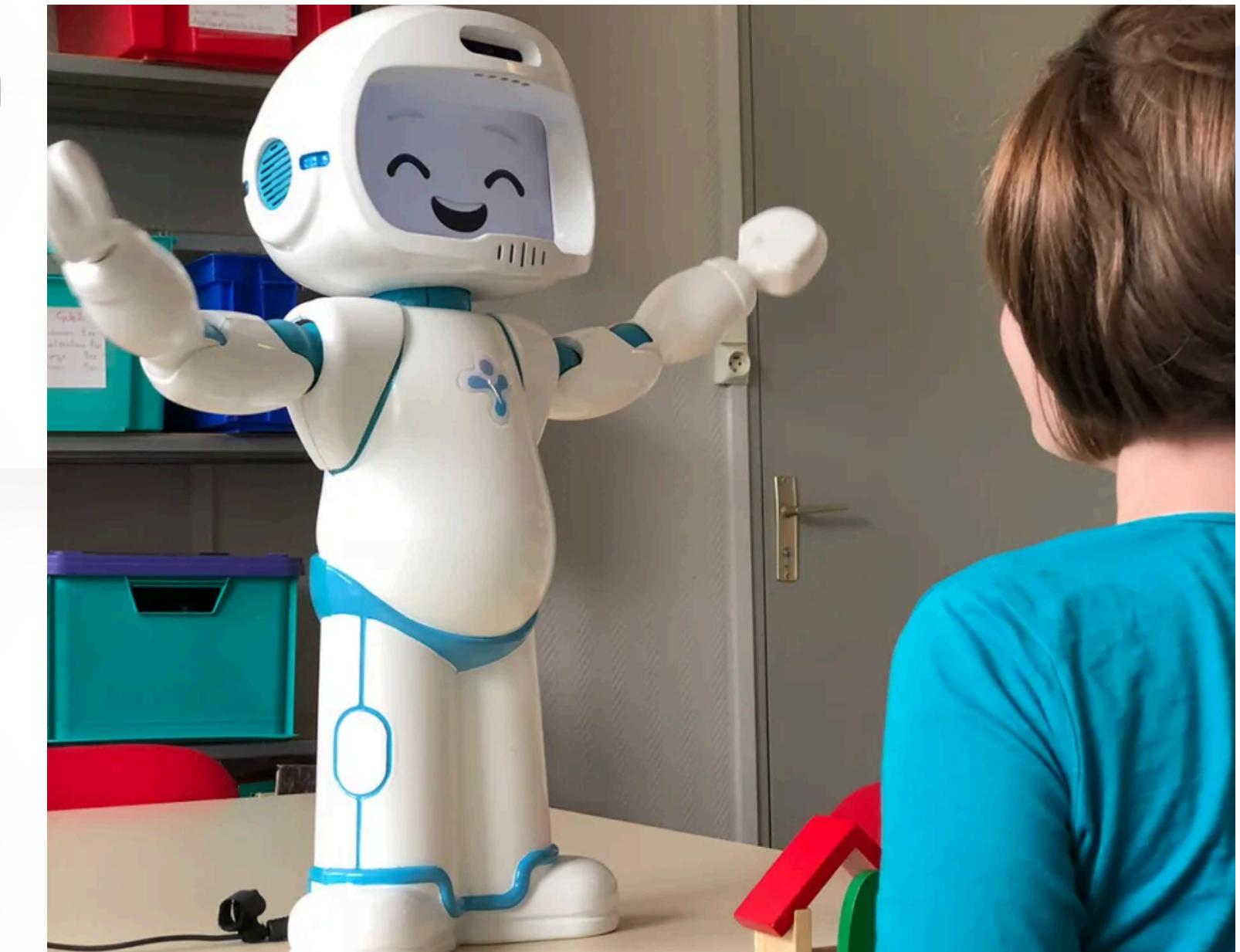
Proposed Solution

- AI Assisted Therapy

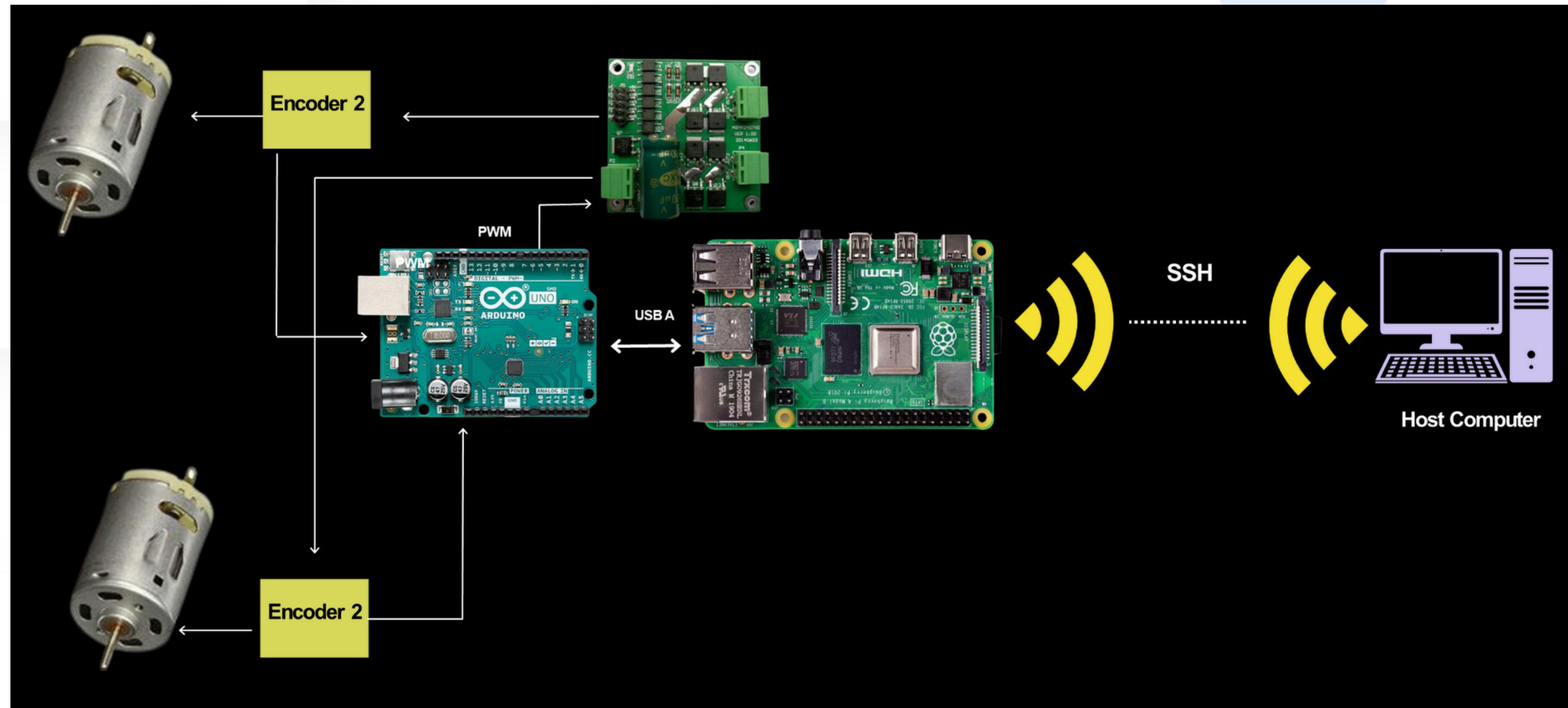
- Emotional Recognition & Gesture Commands

- Speech Recognition

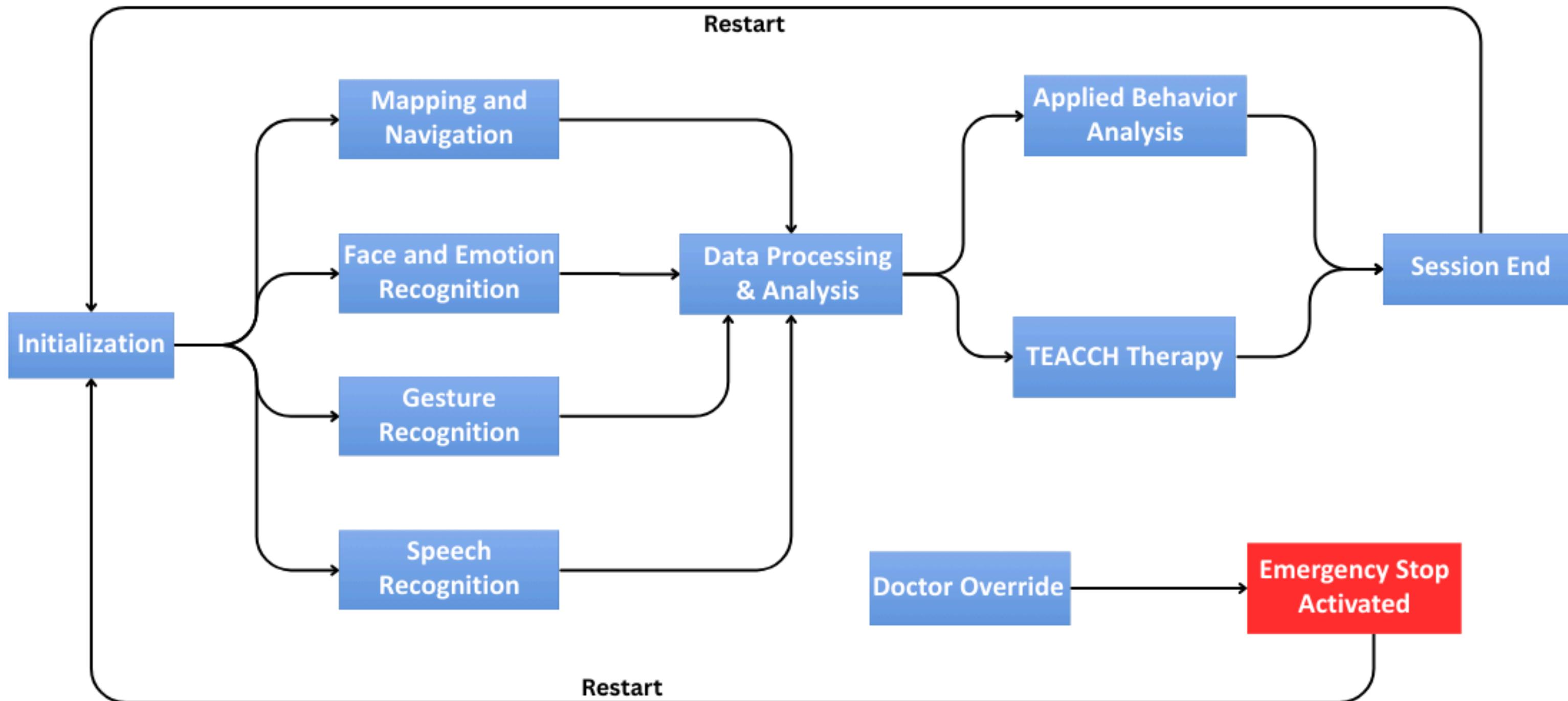
- Real time User Profiling



Methodology



Workflow



Scope and Potential Users of system

Scope of the Project

- Autonomous indoor assistant
- Applications → Education , Healthcare

Potential Users:

- Patients & Healthcare Staff

SDGs



THANK YOU

ANY QUESTIONS?