

# **INTELLIGENT LEARNING ASSISTANT FOR CHILDREN WITH AUTISM SPECTRUM DISORDER**

A Main Project Report

submitted by

**AYISHA BEEBA(MES20MCA-2013)**

to

the APJ Abdul Kalam Technological University  
in partial fulfillment of the requirements for the award of the Degree

of

Master of Computer Applications



**Department of Computer Applications**

MES College of Engineering  
Kuttippuram, Malappuram - 679 582

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## DECLARATION

I undersigned hereby declare that the project report Intelligent Learning Assistant for Children with Autism Spectrum Disorder , submitted for partial fulfillment of the requirements for the award of degree of Master of Computer Applications of the APJ Abdul Kalam Technological University, Kerala, is a bona fide work done by me under supervision of Mr Syed Feroze Ahamed M, Assistant Professor, Department of Computer Applications. This submission represents my ideas in my own words and where ideas or words of others have been included, I have adequately and accurately cited and referenced the original sources. I also declare that I have adhered to ethics of academic honesty and integrity and have not misrepresented or fabricated any data or idea or fact or source in my submission. I understand that any violation of the above will be a cause for disciplinary action by the institute and/or the University and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been obtained. This report has not been previously formed the basis for the award of any degree, diploma or similar title of any other University.

Place: KUTTIPPURAM

AYISHA BEEBA [MES20MCA-2013]

Date: 06/07/2022

DEPARTMENT OF COMPUTER APPLICATIONS  
MES COLLEGE OF ENGINEERING, KUTTIPPURAM



CERTIFICATE

This is to certify that the report entitled Intelligent Learning Assistant for Children with Autism Spectrum Disorder is a bona fide record of the Main Project work carried out by AYISHA BEEBA(MES20MCA-2013) submitted to the APJ Abdul Kalam Technological University, in partial fulfillment of the requirements for the award of the Master of Computer Applications, under my guidance and supervision. This report in any form has not been submitted to any other University or Institution for any purpose.

Internal Supervisor(s)

External Supervisor(s)

Head Of The Department

# Acknowledgements

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AYISHA BEEBA(MES20MCA-2013)

# Abstract

Children with Autism Spectrum Disorder(ASD) suffer from social and communication issues. In addition to that they also exhibit a complex collection of behaviors which makes it difficult for the trainers to identify the methodology to be adapted for training them. At present a mishmash of techniques are used to evaluate them in general, without identifying their uniqueness or specific characteristics. In this paper, we propose a cognitive computing based intelligent learning assistant that could provide suitable courseware by identifying a child specifically based on the behavioural patterns that aids the autistic student's learning. A hybrid approach which blends cognitive, developmental and behavioural psychology is used to generate an autism assessment model, by using which a specific courseware is provided to the child. An interactive chatbot along with a visual aid is used as an interface to interact with the child so as to capture his real-time responses. This system features Reinforcement learning, Regional Convolution Neural Network (R-CNN), Deep Convolution Neural Network (deep-CNN) to provide a personalized learning assistant platform for children with Autism Spectrum Disorder(ASD).

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# Chapter 1

## Introduction

### 1.1 Background

Children with Autism Spectrum Disorder(ASD) suffer from social and communication issues. In addition to that they also exhibit a complex collection of behaviors which makes it difficult for the trainers to identify the methodology to be adapted for training them. At present a mish-mash of techniques are used to evaluate them in general, without identifying their uniqueness or specific characteristics. This project proposes an emotion based intelligent learning assistant that could provide suitable courseware for autistic student 's learning. Along with this, trainer can chat with the parents. They can provide help and guidance to the parents and they can also provide study materials to teach autistic students. This system uses deep learning-based emotion recognition to detect the emotion and association rule mining is used to classify the emotion.

### 1.1.1 Motivation

At present a mishmash of techniques are used to evaluate them in general, without identifying their uniqueness or specific characteristics. All students in a class have to learn same courseware. Teachers cannot identify the specific characteristic of the student.

- All students are forced to select the same courseware.
- Parents contact to the experts directly.
- No way to easily find out the status of their student.

So this project is an intelligent learning assistant that could provide suitable courseware by identifying a child specifically based on emotions of the autistic student. This system uses deep learning-based emotion recognition to detect the emotion and association rule mining is used to classify the emotion. A website is created to connect the experts and parents. They are controlled by an admin. Experts provide study materials and medical help for the students. Parents can ask questions, and they also get the medical help details and tips. This makes the system more attractive. There is no need to contact the experts directly. And they also get medical helps to take care of their children.

## 1.2 Objective

The project proposes an emotion based intelligent learning assistant that could provide suitable courseware for autistic student 's learning. Along with this, trainer can chat with the parents. They can provide help and guidance to the parents and they can also provide study materials to teach autistic students. This system uses deep learning-based emotion recognition to detect the emotion and association rule mining is used to classify the emotion. The learning model is based on deep learning and prediction method. The children are required to watch a set of videos. Each video represents a specific courseware. The system will capture the emotions of the child each second. at the end of each video, ratio of total positive response is calculated. The courseware which have the highest positive ratio is selected as the suitable courseware for the child. apart from this trainer can check whether the student is autistic or not using data mining. The trainers can chat with the parents, they can provide study materials to parents to teach their children and also, they can provide help and guidance to the parents. This can improve the autistic students' behavior and interaction to others.

### 1.3 Contribution

This project is an intelligent learning assistant that could provide suitable courseware by identifying a child specifically based on emotions of the autistic student. This system uses deep learning-based emotion recognition to detect the emotion and association rule mining is used to classify the emotion. A website is created to connect the experts and parents. They are controlled by an admin. Experts provide study materials and medical help for the students. Parents can ask questions, and they also get the medical help details and tips. This makes the system more attractive. There is no need to contact the experts directly. And they also get medical helps to take care of their children.

### 1.4 Report Organization

The project report is divided into five sections. Section 2 describes the literature survey that is the current scenario. Section 3 describes the methodology used for implementing the project. In methodology, workflow of the project, and sprints details are described. Section 4 gives the results and discussions about the project and finally section 5 gives the conclusion.

## Chapter 2

### Literature Survey

Autism spectrum disorder (ASD) is a complex developmental disability, typically appearing during childhood and affecting a person's ability to communicate and interact with others. The word 'spectrum' describes the range of difficulties that people on the autism spectrum may experience and the degree to which they may be affected. The main areas of difficulty are in social communication, social interaction and restricted or repetitive behaviors and interests. People on the autism spectrum may also have:

- 1) Unusual sensory interests such as sniffing objects or staring intently at moving objects
- 2) Sensory sensitivities including avoiding everyday sounds and textures such as hair dryers, vacuum cleaners and sand
- 3) Intellectual impairment or learning difficulties.

Social communication is among the core areas of impairment for children with Autism Spectrum Disorders (ASD). The training of social orientation is important for improving social communication of children with ASD. In recent years, technology-assisted ASD intervention had gained momentum due to its potential advantages in terms of precision, sustainability, flexibility and cost. This project is an intelligent learning assistant that could provide suitable courseware by identifying a child specifically based on emotions of the autistic student. This system uses deep learning-based emotion recognition to detect the emotion and association rule mining is used to classify the emotion. A website is created to connect the experts and parents. They are controlled by an admin. Experts provide study materials and medical help for the students. Parents can ask questions, and they also get the medical help details and tips. This makes the system more attractive. There is no need to contact the experts directly. And

they also get medical helps to take care of their children This system uses deep learning-based emotion recognition to detect the emotion and association rule mining is used to classify the emotion. The learning model is based on deep learning and prediction method.

# Chapter 3

## Methodology

### 3.1 Introduction

At present a mishmash of techniques are used to evaluate them in general, without identifying their uniqueness or specific characteristics. All students in a class have to learn same courseware. Teachers cannot identify the specific characteristic of the student.

- All students are forced to select the same courseware.
- Parents contact to the experts directly.
- No way to easily find out the status of their student.

This system uses deep learning-based emotion recognition to detect the emotion and association rule mining is used to classify the emotion. The learning model is based on deep learning and prediction method. This project is an intelligent learning assistant that could provide suitable courseware by identifying a child specifically based on emotions of the autistic student. This system uses deep learning-based emotion recognition to detect the emotion and association rule mining is used to classify the emotion. A website is created to connect the experts and parents. They are controlled by an admin. Experts provide study materials and medical help for the students. Parents can ask questions, and they also get the medical help details and tips. This makes the system more attractive. There is no need to contact the experts directly. And they also get medical helps to take care of their children.

The learning model is based on deep learning and prediction method. The children are required to watch a set of videos. Each video represents a specific courseware. The system will capture the emotions of the child each second.at the end of each video, ratio of total positive

response is calculated. The courseware which have the highest positive ratio is selected as the suitable courseware for the child. apart from this trainer can check whether the student is autistic or not using data mining. The trainers can chat with the parents, they can provide study materials to parents to teach their children and also, they can provide help and guidance to the parents. This can improve the autistic students' behavior and interaction to others.



## 3.2 Modules

The project is divided into 3 functional modules and a desktop application. They are ,

### 1. Admin

- Login
- Register experts
- View and manage parents
- View feedbacks of parents

Admin register the expert, manage them, view and manage the parents, and view the feedbacks of the Admin controls experts and parents. Admin can register a new parents.

### 2. Experts

- Add study materials
- Provide help and guidance
- Provide medical help for parents
- Provide tips for parents
- View medical reports of children

Experts can upload study materials and answers the questions asked by the parents. they provide medical help details such as medicine names their descriptions and why they are used for. They also provide tips for take care of the autistic children.

### 3. Parent

- Register child
- Update medical reports of their children
- View child assessment report
- Send feedback
- Ask questions to experts
- View study materials
- View tips Parents register in the website.

They also registers their children. They can view child assessment report provided by the

chatbot, they can view study materials and tips provided by the experts, send their feedbacks to the admin, ask questions to experts and view their replays.

#### **Desktop application**

- Detect emotion
- Recognize student
- Classify emotion
- Find positive response ratio

Students can watch a set of videos each represents a specific courseware. Deep learning-based emotion recognition is used to predict the emotions of the child.

### **3.3 Developing Environment**

#### **HARDWARE CONFIGURATION**

PROCESSOR : Intel Pentium IV

MONITOR : LCD Display

RAM : 2 GB

HARD DISK : 500 GB

#### **SOFTWARE CONFIGURATION**

- Operating system : Windows 7 or above, Android
- Technology Used : Python
- IDE : PyCharm
- Framework : Flask
- Database : MySQL

### 3.4 User Story

User Story Id	As a type of User	I want to <perform some task>	So that I can <Achieve Some Goal>
1	Admin	register experts	experts can register
2	Admin	view and manage parents	can view and manage parents
3	Admin	view feedback of parents	view feedbacks
4	Experts	add study materials	manage study materials
5	Expert	provide help and guidance	provide help
6	Expert	provide medical help for parents	provide medical help
7	Expert	provide tips for parents	provide tips
8	Experts	view medical reports	view reports
9	Parent	register child	registration successfull
10	Parent	update medical report	updating reports
11	Parent	view child assessment report	view result
12	Parent	send feedback	send feedback
13	Parent	view tips	view tips
14	Parent	asking questions	asking questions
15	Parent	view study materials	view mateials

Table 3.1: User Story

### 3.5 Product Backlog

A product backlog is a list of the new features, changes to existing features, bug fixes, infrastructure changes or other activities that a team may deliver in order to achieve a specific outcome. The product backlog of the system is given in Table 3.2

User Story Id	Priority (High/Medium/Low)	Size(Hours)	Sprint (<Sprint Id>)	Status (Planned/In progress/Completed)	Release Date	Release Goal
1	Medium	8	1	completed	29/04/2022	UI desgning
2	High	5	2	completed	13/05/2022	Tasks of admin
3	High	10	2	completed	29/05/2022	Expert registra- tion and all task of experts
4	Medium	5	3	completed	01/6/2022	Parent registra- tion and its tasks
5	High	5	4	completed	28/06/2022	Analysing and classifying emo- tions

Table 3.2: Product Backlog

### 3.6 Project Plan

A project plan that has a series of tasks laid out for the entire project, listing task durations, responsibility assignments, and dependencies. The Project plan is given in Table 3.3

User Story Id	Task Name	Start Date	End Date	Hours	Status
1	Sprint 1	20/04/2022	1/05/2022	10	Completed
2	Sprint 1	4/05/2022	15/05/2022	8	Completed
3	Sprint 2	17/05/2022	28/05/2022	5	Completed
4	Sprint 2	29/05/2022	1/06/2022	6	Completed
5	Sprint 3	2/06/2022	5/06/2022	9	Completed
6	Sprint 4	10/06/2022	29/06/2022	11	Completed

Table 3.3: Project Plan

The Project has five sprints:

- 1. Sprint 1 :** In the first sprint tables and form designing and its basic coding is completed.
- 2. Sprint 2 :** In the second sprint the duties of admin and expert registration is done.
- 3. Sprint 3:** In the third sprint the parent registration is done.
- 4. Sprint 4 :**In the fourth sprint the desktop application is created and analysed.

### 3.7 Sprint Actual

Backlog Item	Status And Completion Date	Original Estimation in Hours	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
UserStory 1,2,3			hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs
Form Designing	1/05/2022	9	1	1	1	2	0	1	1	0	2	0	0	0	0	0
Coding	15/05/2022	10	1	3	0	1	1	0	1	0	0	3	0	0	0	0
UserStory 4,5																
Admin login and managing	28/05/2022	6	1	1	0	1	1	2	0	0	0	0	0	0	0	0
Expert login and managing	1/06/2022	6	0	4	2	0	0	0	0	0	0	0	0	0	0	0
UserStory 6,7																
Parents managing students	10/06/2022	9	0	0	0	0	2	1	1	0	0	0	0	0	0	0
Detecting and recognizing	20/06/2022	4	0	0	0	1	0	2	0	0	0	0	0	0	0	0
Analysing student	29/06/2022	6	0	1	1	0	2	0	0	0	2	3	0	0	0	0
Total		34	3	9	4	4	4	4	3	0	2	3	0	0	0	0

Table 3.4: Sprint Actual

## Chapter 4

# Results and Discussions

### 4.1 Results

The learning model is based on deep learning and prediction method. This system uses deep learning-based emotion recognition to detect the emotion and association rule mining is used to classify the emotion. A Convolutional Neural Network (ConvNet/CNN) is a Deep Learning algorithm which can take in an input image, assign importance to various aspects/objects in the image and be able to differentiate one from the other. This is the algorithm used. This project proposes an emotion based intelligent learning assistant that could provide suitable courseware for autistic student 's learning. Along with this, trainer can chat with the parents. They can provide help and guidance to the parents and they can also provide study materials to teach autistic students.

## Chapter 5

### Conclusions

Children with Autism Spectrum Disorder(ASD) suffer from social and communication issues. In addition to that they also exhibit a complex collection of behaviors which makes it difficult for the trainers to identify the methodology to be adapted for training them. we propose a cognitive computing based intelligent learning assistant that could provide suitable courseware by identifying a child specifically based on the behavioural patterns that aids the autistic student's learning. A hybrid approach which blends cognitive, developmental and behavioural psychology is used to generate an autism assessment model, by using which a specific courseware is provided to the child. An interactive chatbot along with a visual aid is used as an interface to interact with the child so as to capture his real-time responses. This system features Reinforcement learning, Regional Convolution Neural Network (R-CNN), Deep Convolution Neural Network (deep-CNN) to provide a personalized learning assistant platform for children with Autism Spectrum Disorder(ASD). This system uses deep learning-based emotion recognition to detect the emotion and association rule mining is used to classify the emotion. The learning model is based on deep learning and prediction method.



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# Appendix

## Source Code

---

```
# USAGE
# python encode_faces.py --dataset dataset --encodings encodings.pickle

# import the necessary packages
# import os
from flask import *
from werkzeug.utils import secure_filename

# from src.myknn import prep

app = Flask(__name__)
app.secret_key="qqwerty124"
import functools
from src.dbcon import *

def login_required(func):
    @functools.wraps(func)
    def secure_function():
        if "lid" not in session:
            return redirect("/")
        return func()
    return secure_function

@app.route('/')
def main():
    return render_template('LOGIN.html')
@app.route('/log',methods=['post'])
def log():
    uname=request.form["textfield"]
    pwd=request.form["textfield2"]
    qry="select*from login where user_name=%s and password=%s"
    val=(uname,pwd)
    res=selectone(qry,val)
    if res is None:
        return '<script>alert("invalid username or password");window.location="/</script>'
    elif res[3]=="admin":
        session['lid']=str(res[0])
        return redirect('adminhome')
    elif res[3]=="expert":
        session['lid']=str(res[0])
        return redirect('expert_home')
```

---

## Appendix

---

```
        else:
            return'''<script>alert("invalid username or password");window.location="/"</script>'''
@app.route('/adminhome')
@login_required
def adminhome():
    return render_template('ADMINHOME.html')

@app.route('/addexperts',methods=['post'])
@login_required
def addexperts():
    return render_template('ADD EXPERTS.html')

@app.route('/addexpert1',methods=['post'])
@login_required
def addexpert1():
    try:
        name=request.form['textfield']
        exp=request.form['textfield2']
        gender=request.form['radiobutton']
        place=request.form['textfield3']
        phone=request.form['textfield4']
        email=request.form['textfield5']
        username=request.form['textfield6']
        password=request.form['textfield7']
        qry="insert into login values(null,%s,%s,'expert') "
        val=(username,password)
        lid=iud(qry,val)
        qry1="insert into experts values(null,%s,%s,%s,%s,%s,%s,%s) "
        val=(name,exp,gender,place,phone,email,str(lid))
        iud(qry1,val)
    except Exception as e:
        return '''<script>alert("Username already exists");window.location="/expertdetails#About"</script>'''

    return'''<script>alert("success");window.location="/expertdetails#About"</script>'''

import os
from datetime import datetime

import math
from flask import *
from werkzeug.utils import secure_filename

from src.dbcon import *

app=Flask(__name__)

@app.route("/logincode",methods=['post'])
def logincode():
    uname=request.form['username']
    print(uname)
    password=request.form['password']
    print(password)
    q="select * from login where user_name=%s and password=%s and user_type='student'"
    val=(uname,password)
    res=selectone(q,val)
    if res is None:
        return jsonify({'task':'invalid'})
```

---

## Appendix

---

```
else:
    return jsonify({'task': 'success', 'lid': res[0]})

@app.route("/userreg", methods=['post'])
def userreg():

    print(request.form)
    studname=request.form['sname']
    dob=request.form['dob']
    place=request.form['place']
    gender=request.form['gender']
    phonenumber=request.form['phnum']
    description=request.form['description']

    uname = request.form['username']
    passwd = request.form['password']

    qry="INSERT INTO login values(null,%s,%s,'student')"
    val=(uname,passwd)
    id=iud(qry,val)

    qry="INSERT INTO student values(null,%s,%s,%s,%s,%s,%s,%s)"
    val=(studname,dob,place,gender,phonenumber,description,str(id))
    iud(qry,val)
    return jsonify({'task': 'success'})


from _thread import start_new_thread
from tkinter import *
import tkinter as tk
from tkinter import messagebox
from tkinter.ttk import Combobox
import tkinter.ttk as ttk
import os

import time

import numpy as np
import cv2
from keras.preprocessing import image
from scipy.ndimage import rotate

root=Tk()
root.geometry('780x550+20+0')
import pymysql
# -----
# face expression recognizer initialization
from keras.models import model_from_json

model = model_from_json(open("model/facial_expression_model_structure.json", "r").read())
model.load_weights('model/facial_expression_model_weights.h5') # load weights

# -----
con=pymysql.connect(host='localhost',port=3306,user='root',password='',db='autism')
cmd=con.cursor()
# lb = tk.Listbox(root)
# lb.pack()
flag=False
rec_emotions=[]
def ff():
```

---

## Appendix

---

```
start_new_thread(ffplay, ())
start_new_thread( detect_emotion(), ())

def st():
    root.destroy()
```

---

## Database Design

Attribute Name	Datatype	Length	Description
$\text{exp}_i d$	int	11	NOT NULL
$\text{exp}_n \text{ame}$	varchar	20	NOT NULL
experience	varchar	50	NOT NULL
gender	varchar	20	NOT NULL
place	varchar	20	NOT NULL
phonebig	int	20	NOT NULL
email	varchar	100	NOT NULL
$\text{login}_i d$	int	11	NULL

Table A.1: expert

Attribute Name	Datatype	Length	Description
$\text{f}_{b_i} d$	int	11	NOT NULL
$\text{user}_i d$	int	11	NOT NULL
$\text{parent}_{fb}$	text	NULL	
$\text{f}_{bdate}$	date	NOT NULL	

Table A.2: feedback

---

Attribute Name	Datatype	Length	Description
$g_id$	int	11	NOT NULL
$report_id$	int	11	NOT NULL
$exp_id$	int	11	NOT NULL
$ginfo$	text	NOT NULL	

Table A.3: guidance

Attribute Name	Datatype	Length	Description
$intr_id$	int	11	NOT NULL
$user_id$	int	11	NOT NULL
questions	varchar	11	NOT NULL
$exp_id$	int	11	NOT NULL
$intr_date$	varchar	45	NOT NULL
$intr_time$	varchar	54	NOT NULL

Table A.4: interaction

---

Attribute Name	Datatype	Length	Description
$user_id$	int	11	NOT NULL
$user_name$	varchar	20	NOT NULL
password	varchar	20	NOT NULL
$user_type$	varchar	20	NOT NULL

Table A.5: login

Attribute Name	Datatype	Length	Description
$parent_id$	int	11	NOT NULL
$login_id$	int	11	NULL
$first_name$	varchar	200	NULL
$last_name$	varchar	200	NULL
contactbig	int	20	NULL
email	varchar	200	NULL

Table A.6: parent

---



Attribute Name	Datatype	Length	Description
$tips_id$	int	11	NOT NULL
$tips_info$	text	NULL	
$exp_id$	int	11	NOT NULL

Table A.7: tips

Attribute Name	Datatype	Length	Description
$std_id$	int	11	NOT NULL
$std_name$	varchar	50	NOT NULL
dobvar	char	50	NOT NULL
place	varchar	50	NOT NULL
gender	varchar	20	NOT NULL
$phone_{nobi}$	int	20	NOT NULL
description	text	NOT NULL	
$user_id$	int	11	NOT NULL

Table A.8: student

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Attribute Name	Datatype	Length	Description
id	int	11	NOT NULL
file	text	NOT NULL	
mat <sub>type</sub>	text	NULL	

Table A.9: questions

Attribute Name	Datatype	Length	Description
es <sub>i</sub> d	int	11	NOT NULL
intr <sub>i</sub> d	int	11	NOT NULL
res <sub>i</sub> nfo	text	NOT NULL	
res <sub>date</sub>	varchar	43	NOT NULL
res <sub>time</sub>	varchar	43	NOT NULL

Table A.10: response

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Attribute Name	Datatype	Length	Description
$report_i d$	int	11	NOT NULL
$user_i d$	int	11	NOT NULL
$report_i n f o$	varchar	500	NOT NULL
$exp_i d$	int	11	NOT NULL

Table A.11: medical report

Attribute Name	Datatype	Length	Description
$std_{m a t_i d}$	int	11	NOT NULL
$std_{m a t_i n f o}$	varchar	500	NOT NULL
$u p_d a t e$	varchar	44	NOT NULL
$exp_i d$	varchar	11	NOT NULL
$mat_{t y p e}$	varchar	50	NOT NULL

Table A.12: study materials

---

Attribute Name	Datatype	Length	Description
$v_{fid}$	int	11	NOT NULL
id	int	11	NOT NULL
ratio	float	NULL	
$std_d$	int	11	NOT NULL

Table A.13: video frame

Dataflow Diagram

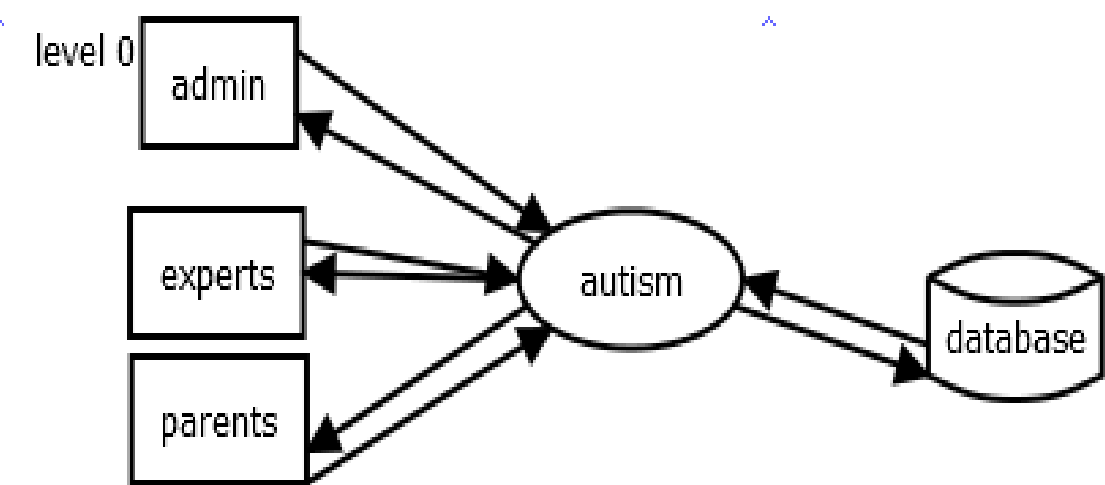


Figure A.1: LEVEL 0

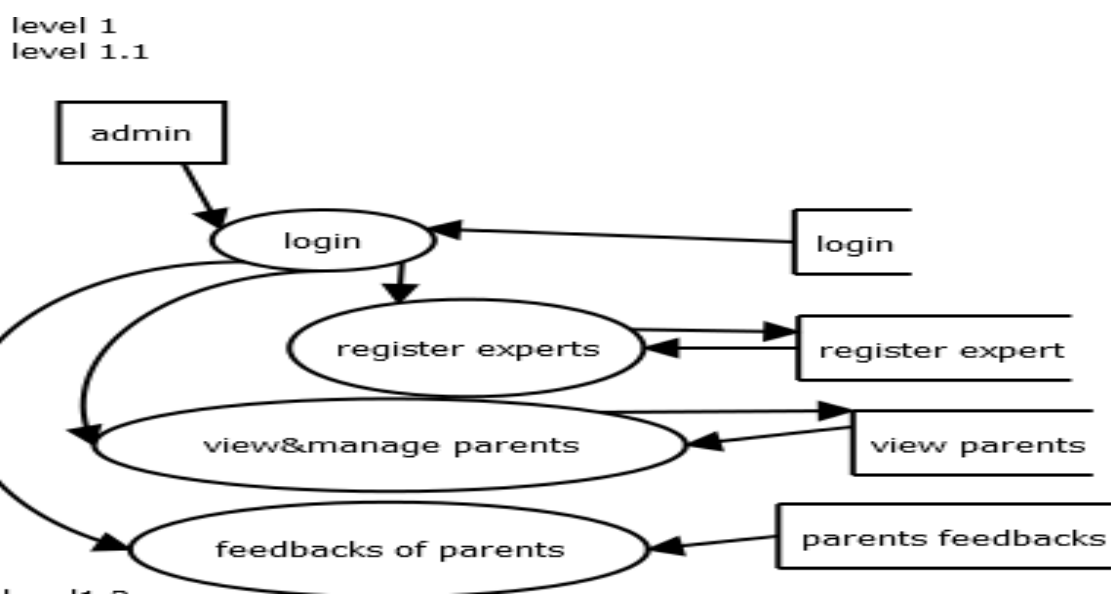


Figure A.2: LEVEL 1.0



Figure A.3: LEVEL 1.1

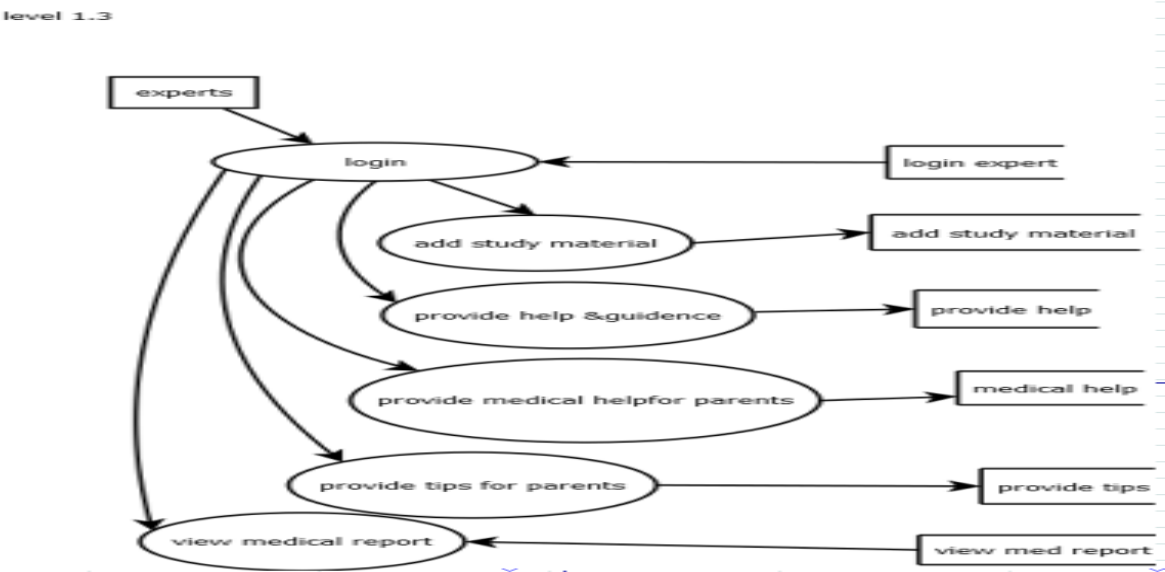


Figure A.4: LEVEL 1.2

# User Interface

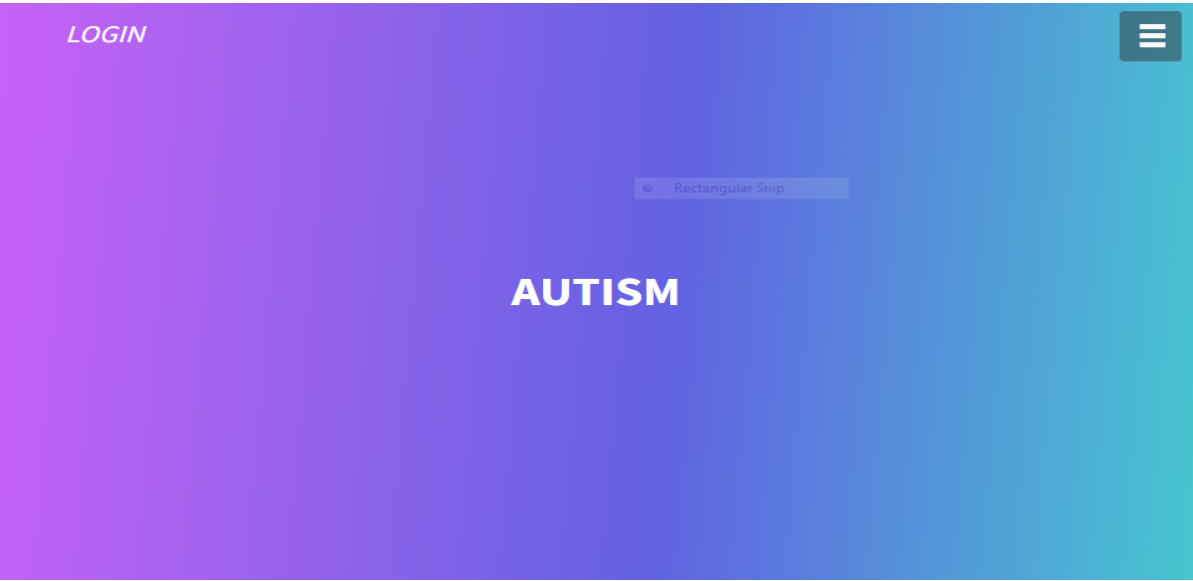


Figure A.5: Home page



Figure A.6: Admin login

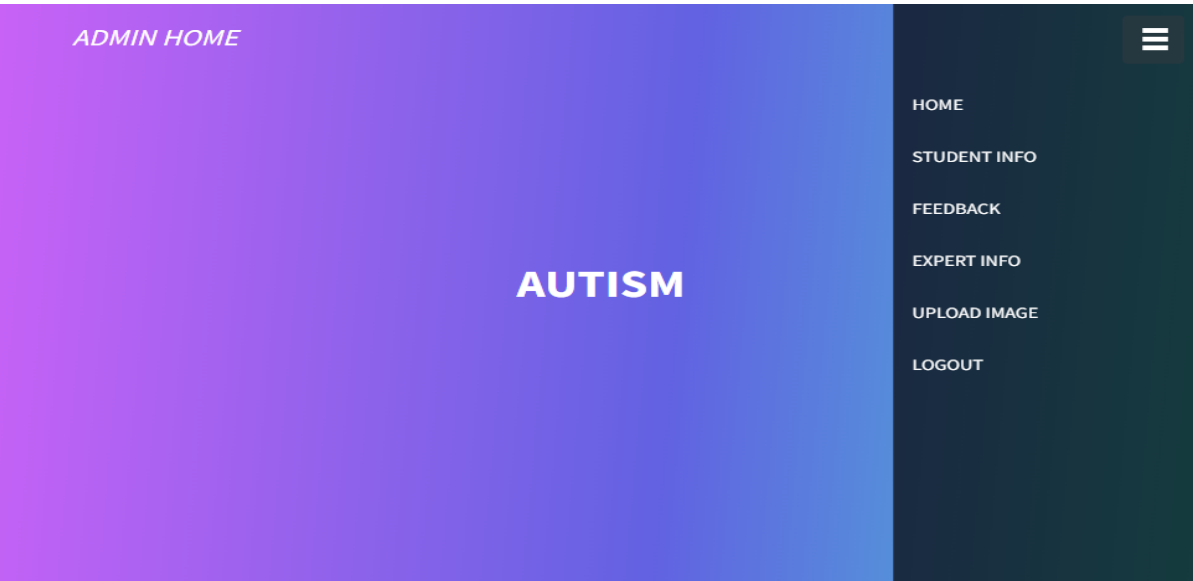


Figure A.7: Admin Home



Figure A.8: expert home

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EXPERT DETAILS						
NAME	EXPERIENCE	GENDER	PLACE	PHONE	EMAIL	
salman	degree	male	wayanad	9961525401	salmanfariz052@gmail.com	<a href="#">EDIT</a> <a href="#">DELETE</a>
aysha	2	female	nbr	9048944748	aysha@gmail.com	<a href="#">EDIT</a> <a href="#">DELETE</a>
asha	1	female	palakkad	9048944741	asha@gmail.com	<a href="#">EDIT</a> <a href="#">DELETE</a>
<a href="#">ADD NAME</a>						

Figure A.9: expert info

FEEDBACK		
DATE	NAME	FEEDBACK
2022-06-27	sam	k
2022-06-27	sam	qwre
2022-04-29	sam	feed
2022-04-29	sam	feed
2022-03-25	sam	feeeeed
2022-01-19	siva	okk
2022-01-18	Joe	okkk
2022-01-17	Joe	joy

Figure A.10: Feedback

MATERIAL\_TYPE

video ▾

MATERIAL INFO

Choose File No file chosen

Submit

date	type	material	
2021-09-23	text	ADMINHOME.html	<a href="#">remove</a>
2021-09-24	video	ADD_EXPERTS.html	<a href="#">remove</a>

Figure A.11: Materials

INTERACTION

NAME	PLACE	GENDER	NUMBER	
Joe	calicut	male	99615125401	<div>CHECK TYPE</div>
siva	Calicut	Male	6958362547	<div>CHECK TYPE</div>
sam	Calicut	Male	7025659546	<div>CHECK TYPE</div>

Figure A.12: response

STUDENT DETAILS					
NAME	DOB	PLACE	GENDER	PHONE	DESCRIPTION
Joe	8/5/2001	calicut	male	9961525401	abcdefg
siva	12/12/2000	Calicut	Male	6958362547	description
sam	05-11-2000	Calicut	Male	7025659546	Description

Figure A.13: student information

TIPS

TIPS INFO

ADD TIPS HERE

Submit

Figure A.14: tips

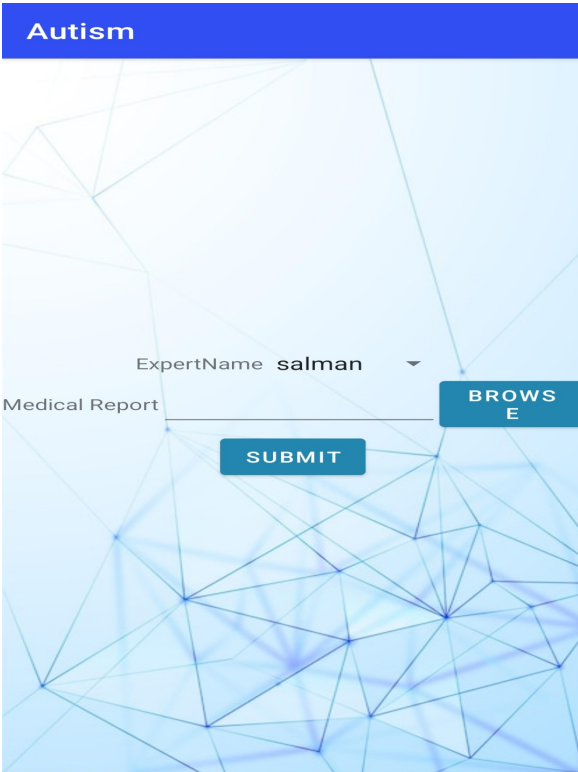


Figure A.15: expert info

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Autism		
Date	Study Materials	Expert Name
2021-09-23	ADMINHOME.htm l	aysha
2021-09-24	ADD_GUIDANCE.h tml	salman
2021-09-24	ADD_EXPERTS.ht ml	aysha

Autism	
Question	Reply
wrfx	asdf

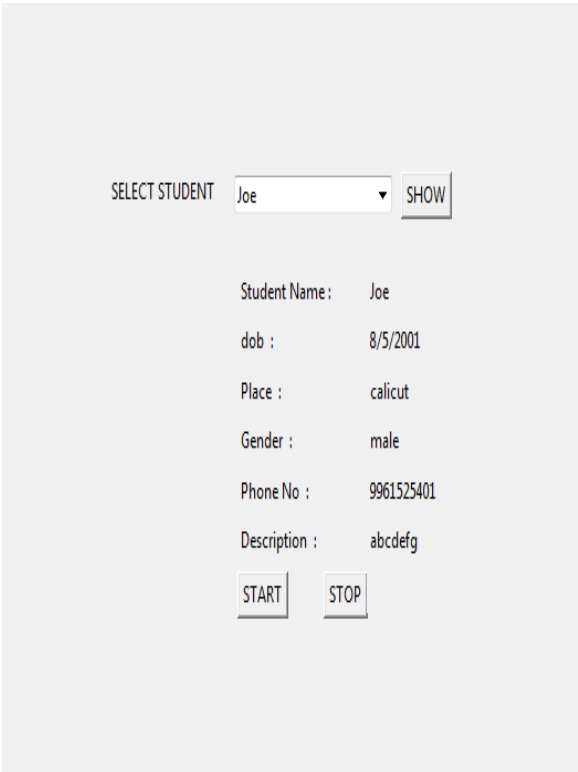
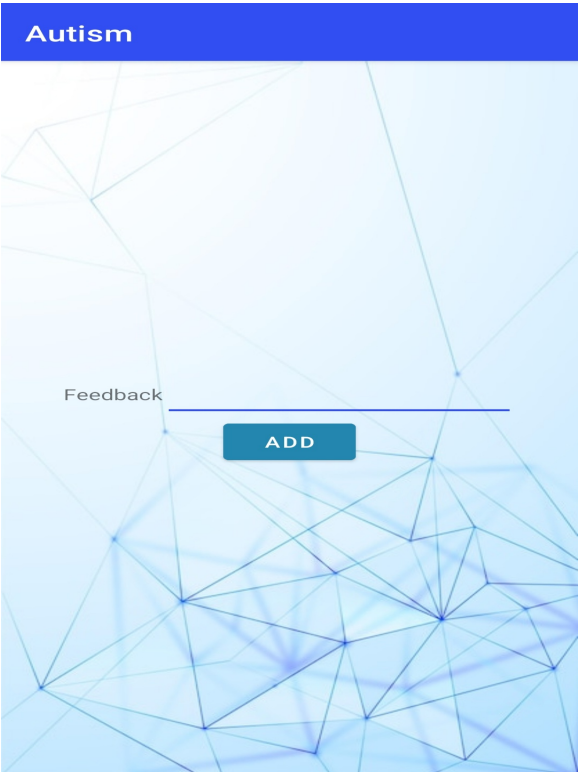


Figure A.16: emotion

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