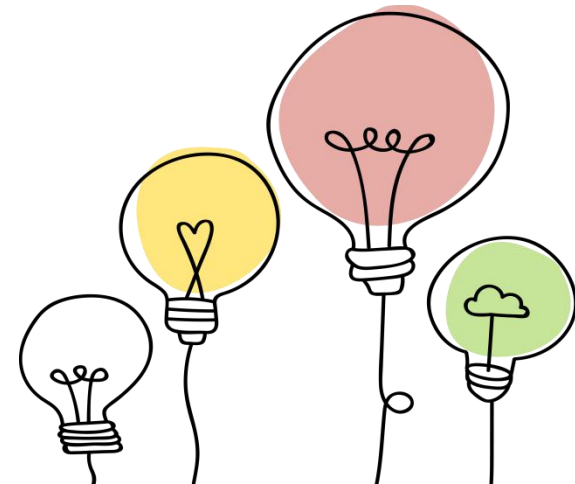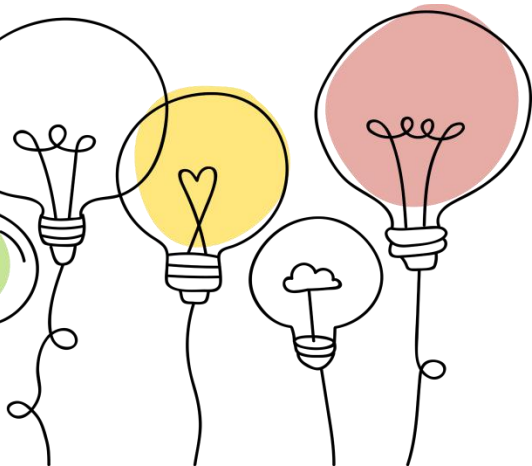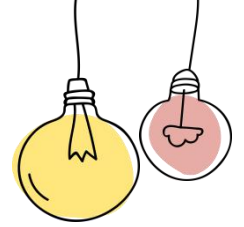# One-stop Intelligent Assisted Bilingual TCM Parenting Interactive System
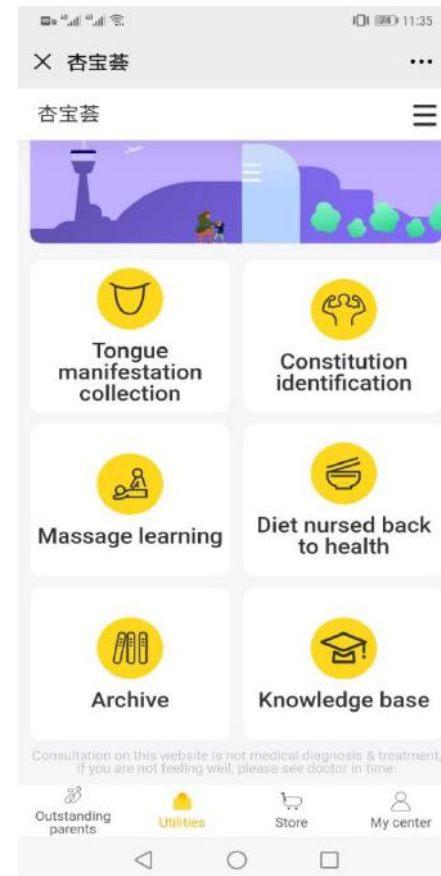
JIA MINGXUAN

CHINA

INTRODUCTION

- **Design the first children's health interactive system in the application market, which combines the functions of intelligent assisted TCM constitutions identification and tongue image identification.**

- **With the system, parents can have accurate understanding of the characteristics of children's physiological and psychological development; adopt targeted nursing methods according to the results of constitution identification; and master the TCM care in family for children's common diseases.**
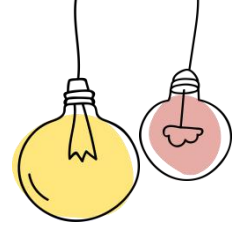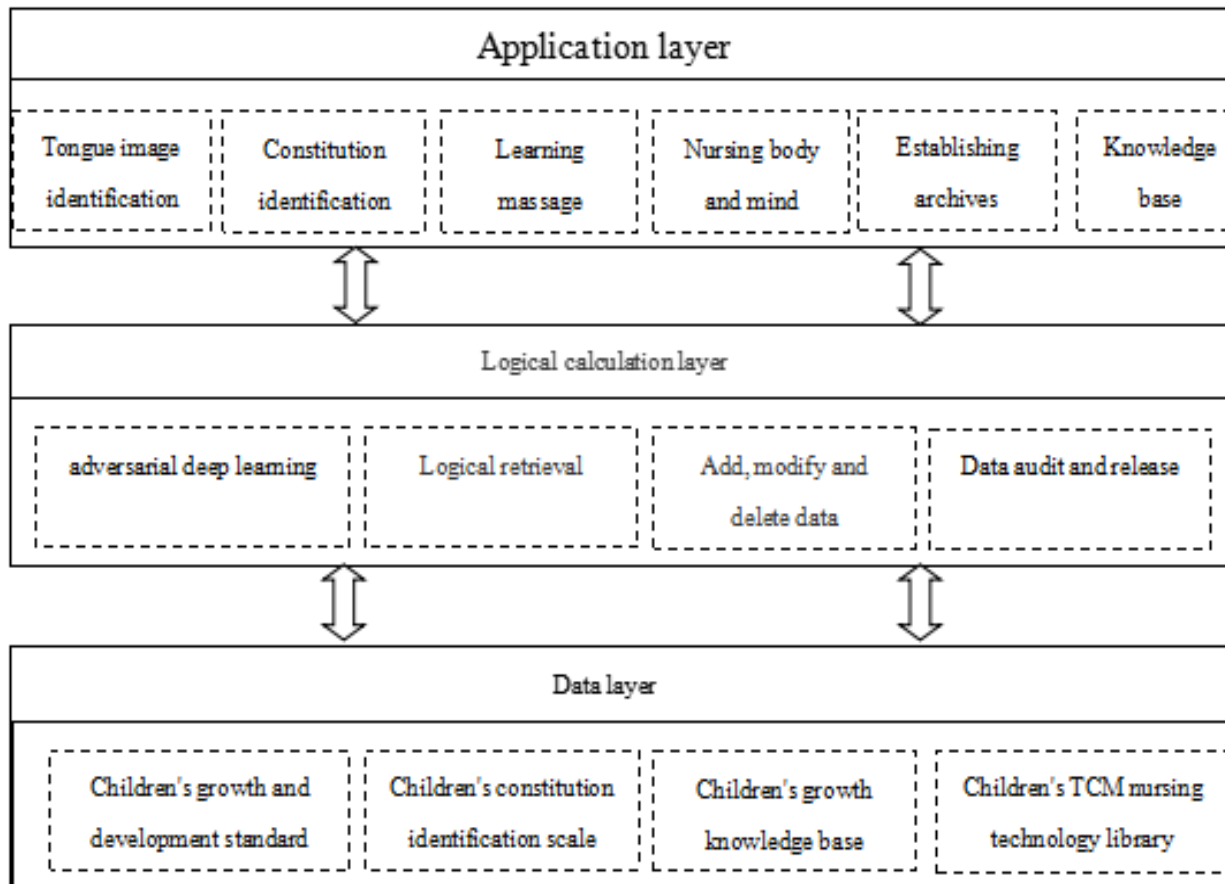
The system's front page
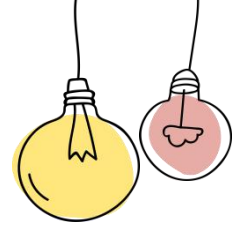
WORKS OF ARCHITECTURE

With .net as the development environment, and combining Mysql data base, the B/S architecture Web application is developed.
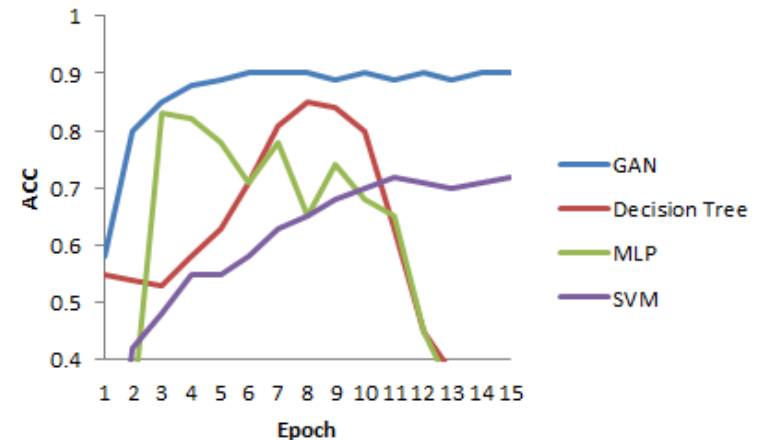

Application layer

| Tongue image identification | Constitution identification | Learning massage | Nursing body and mind | Establishing archives | Knowledge base |

Logical calculation layer

| adversarial deep learning | Logical retrieval | Add, modify and delete data | Data audit and release |

Data layer

| Children's growth and development standard | Children's constitution identification scale | Children's growth knowledge base | Children's TCM nursing technology library |

THE CORE ALGORITHM

- **For the first time, Generative Adversarial Neural Network (GAN) was adopted to construct the intelligent identification model of children's TCM constitutions.**

- **GAN, Decision Tree, MLP, SVM were used for data simulation experiment comparison.**
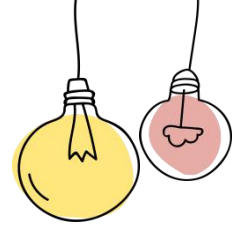
- **GAN has the highest accuracy of 92.1%.**

Model	ACC	Precision	Recall	F1-score
GAN	0.921	0.913	0.992	0.921
Decision Tree	0.894	0.880	1.000	0.894
MLP	0.837	0.837	0.996	0.852
SVM	0.815	0.815	1.000	0.838

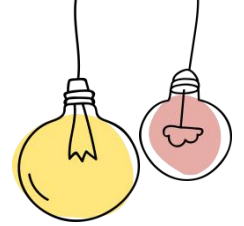Some models were used for data simulation experiment comparison

WORK APPLICATION

- **This system has the functions of sensitive recognition of children's tongue image, identification of children's TCM constitutions, inquiry of children's TCM recuperation of common diseases, etc.**

- **This system can be installed and applied in smart phones and tablet computers with an iOS or Android system, can be used for science popularization, commercial operation and to the international promotion of TCM .**
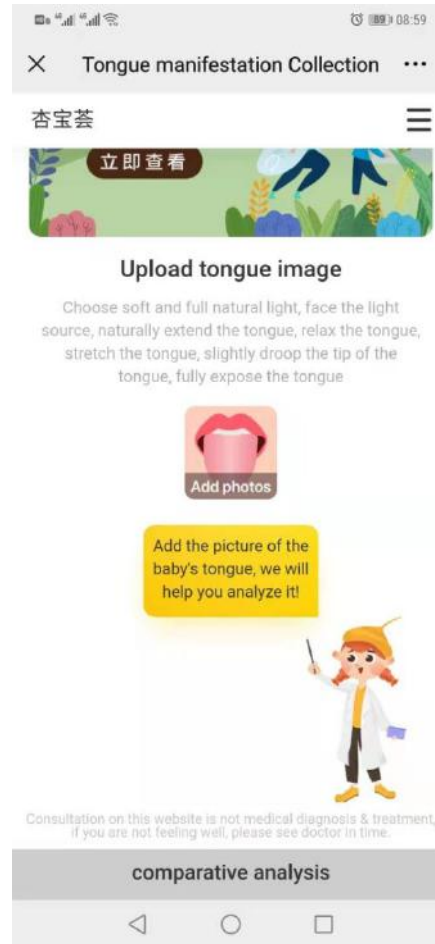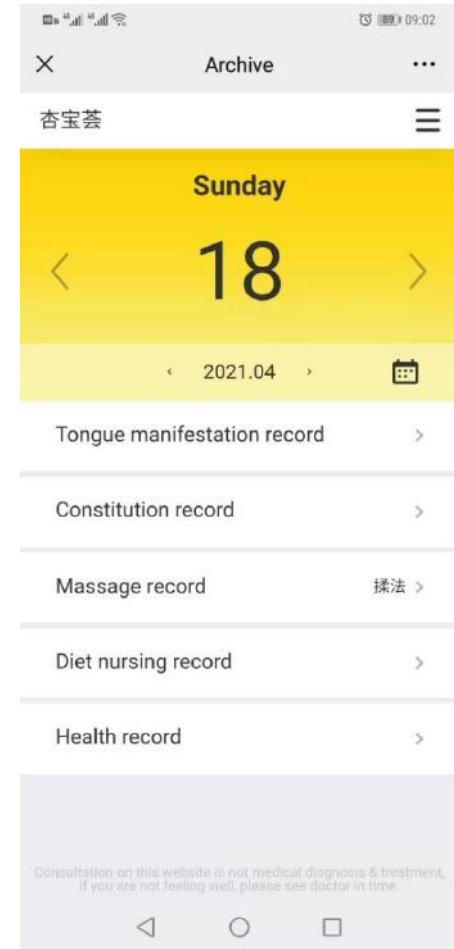

Tongue image contrast verification

THE SYSTEM INTERFACE

Constitution identification

Tongue image acquisition

Health records