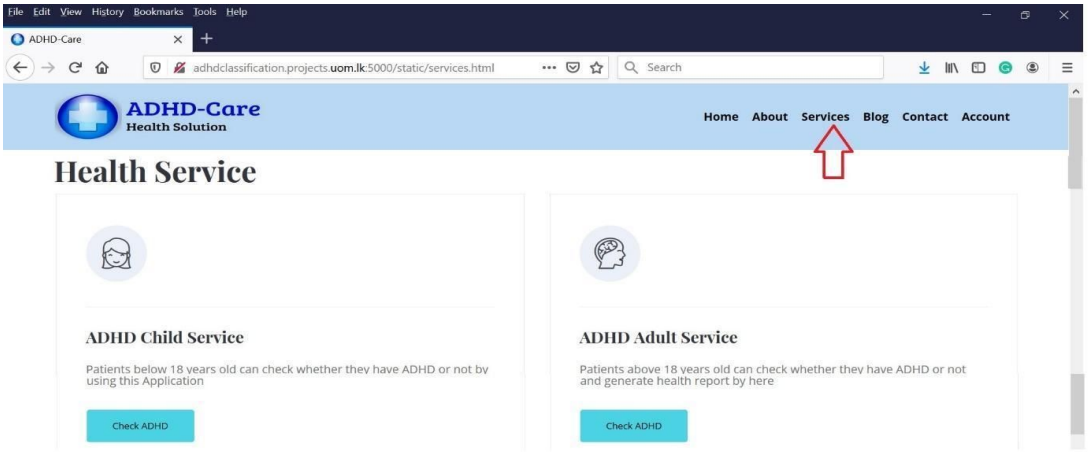
ADHD-Care – Task Sheet

ADHD-Care system can be used as a support tool for identifying possible ADHD subjects from the patient test records. The main data types considered for this study are functional Magnetic Resonance Data (fMRI) and eye movement data.

For this experiment, users can use the system functionalities without a user account. However, the user gets a patient ID for the first time he/she uses the ADHD-Care services. Later, this patient ID can be used to track their records in the ADHD-Care application. Psychiatrists can sign up for an account and login to add patient details under that account and view the patient history via the psychiatric portal.

The main interface of the ADHD-Care application
http://adhdclassification.projects.uom.lk:5000/



Input data files:

fMRI data – Currently, the ADHD-care system uses Functional MRI brain scan images for ADHD identifying process for children. However, these images can be used for adults as well. fMRI data determine the brain activities by detecting the changes in blood oxygen levels in the different brain areas that occur as responses to several neural functionalities.
For this experiment, we have provided sample raw fMRI data in nifti (.nii.gz) format.

adhd.nii.gz – sample of one fMRI brain scan image of an ADHD subject
nadhd.nii.gz - sample of one fMRI brain scan image of a Non-ADHD subject

Eye movement data - ADHD-Care system uses eye movement data for ADHD identification process of adults. Data is acquired during a task that reads sentences on the computer screen. Tobii Pro X2-60 eye tracker was used for screen-based capture of gaze data, which creates reflection patterns on the corneas of eyes. Eye movement data cannot be used for children, as it is difficult to acquire data from children. For this experiment, we have provided a test gaze related dataset which is in CSV file format with sample eye movements of an ADHD person.

For this experiment, we have provided sample eye movement data in .csv format.

test_data_adhd.csv – sample of eye movement data of an ADHD subject (207 records)
test_data_nadhd.csv- sample of eye movement data of a Non-ADHD subject (1365 records)

A record includes a summary of the raw data grouped by proceeding fixations (fixed gaze points) and saccades (rapid gaze movements) providing the number of fixations/saccades in the group, average, standard deviation of fixation/saccade durations, mean gaze point for the group (fixation/ saccade), mean pupil diameter for both left and right eye, patient gender, and diagnosis label.

Task 1: Identify possible ADHD subjects using fMRI data for children
This service is provided for child patients to derive a probability of getting ADHD by using fMRI brain scanning data.

1. Click **Service** from the header menu.
2. Click **Check ADHD** from ADHD child service.
3. The system will prompt for “Are you a registered patient”. Click **YES** for an existing user or click **NO** for new patient registration.
4. If a new patient needs to be added, fill out the form with personal details (**first name, last name, age, email, symptoms, chronic diseases**).
5. For an existing user, all the patient details will be auto-filled. (For an existing user, use the existing “patient ID” = 172 for the testing purpose.)
6. Press the **Upload File** button. Then choose the fMRI scanning data file from your device (.nii or .nii.gz format).
7. Click the **Health Report** button. (The intermediate tasks will be performed by the back end and the progress will be shown to the user)
8. Then it will be redirected to the generated report with predicted results for verification.
9. Click the download report and view the downloaded report.

Task 2: Identify possible ADHD subjects using eye movement data for adults
This service is provided for adult patients to derive a probability value of having ADHD using eye movement data.

1. Click Service from the header
2. Click **Check ADHD** from ADHD adult service.
3. The system will prompt for “Are you a registered patient”. Click **YES** for an existing user or click **NO** for new patient registration.
4. If a new patient needs to be added, fill out the form with personal details (first name, last name, age email, symptoms, chronic diseases).
5. For an existing user, all the patient details will be auto filled. (For an existing user, use the existing “patient ID” = 172 for the testing purpose.)
6. Press the **Upload File** button. Then choose the eye movement data file in your device (.csv format)
7. Click **the Health Report** button**.**
8. Then it will be redirected to the generated report with predicted results
9. Click download report and view the downloaded report

Task 3: Psychiatric Registration
1. Click **Account** from the header
2. For a new psychiatrist fill the signup form and click **Sign up** button
3. Click the **login button** to access the account.

For an existing psychiatrist,
1. Enter the valid Email address and password in the login form

Use the below test account to log into a **sample psychiatrist account**

Email - john@gmail.com
Password - john123

2. Click **Login** button
3. Then the verified user will be redirected to the page with the patient's ADHD identification tests performed by the psychiatrist.
4. Click on **PDF** button to download reports of the patients.
5. Type in the search bar to filter out the results.

Learn about ADHD

1. Click **About** from the header and view more information on ADHD.
2. Click **Blog** from the header and blogs related to ADHD can be viewed.