



MyHealthAvatar

Understand Your Own Data





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1 Introduction

The Avatar is your lifetime companion and it collects your health information throughout the journey of your life. The long-term collection of the data provides extremely useful information and it brings you the opportunities to know about yourself. MyHealthAvatar offers a range of smart tools to help you understand your own data and facilitate the knowledge discovery about key events and summative information in your life. These include:

- Dashboard (web only) - an overview of your health information. The Dashboard shows your current location, the weather of your location and your overall activities and health information and assessment .
- Diary (web only) - The Diary shows your movement on a daily basis. The calendar shows the information of your daily step counts, travel distance. It is also the place to allow you to annotate your locations.
- Calendar (mobile only) – The Calendar is used to schedule your events including your medications. It can also be used to view places you have visited and get a more detailed view of each individual day via a navigation-based animation. It is also offers to tool to allow you to annotate your locations.
- Day View and Statistics View (mobile only) – Your activity data can be viewed from the mobile application.
- LifeTracker (web only) - This is a suite of techniques that presents lifestyle data and allows you to interactively look into their daily events, and weekly, monthly or yearly summary of life patterns and activities..
- MyEvents (web only) - It introduces a novel event-ranking model, which allows you to efficiently query the events using a self-defined query strategy based on their preference of frequency, variance and event category
- LifeLoop (web only) - LifeLoop is a novel visual analytics tool for personal life pattern mining based on analysis of loop episodes in daily activity routes. It allows you to easily reveal the frequent, rare or similar patterns as well as significant life patterns changes.
- Activity Timeline (web only) - Activity Timeline: The interactive timeline allows you to view your activity data within a selected time period.
- Charts (web only) - A method to visualise time-varying data and events in a linear layout which is suitable for continuous variables which may cover a relatively long period, such as health indicators and medical measurements.
- 2D Avatar (web only) - An interactive 2D body map to show your medical history:
- Sharing (mobile only) - You may participate in health related community games (e.g. who has the largest step count). You can also share your data and health related information via social media by linking MyHealthAvatar with Twitter.



2 Dashboard

2.1 Overview

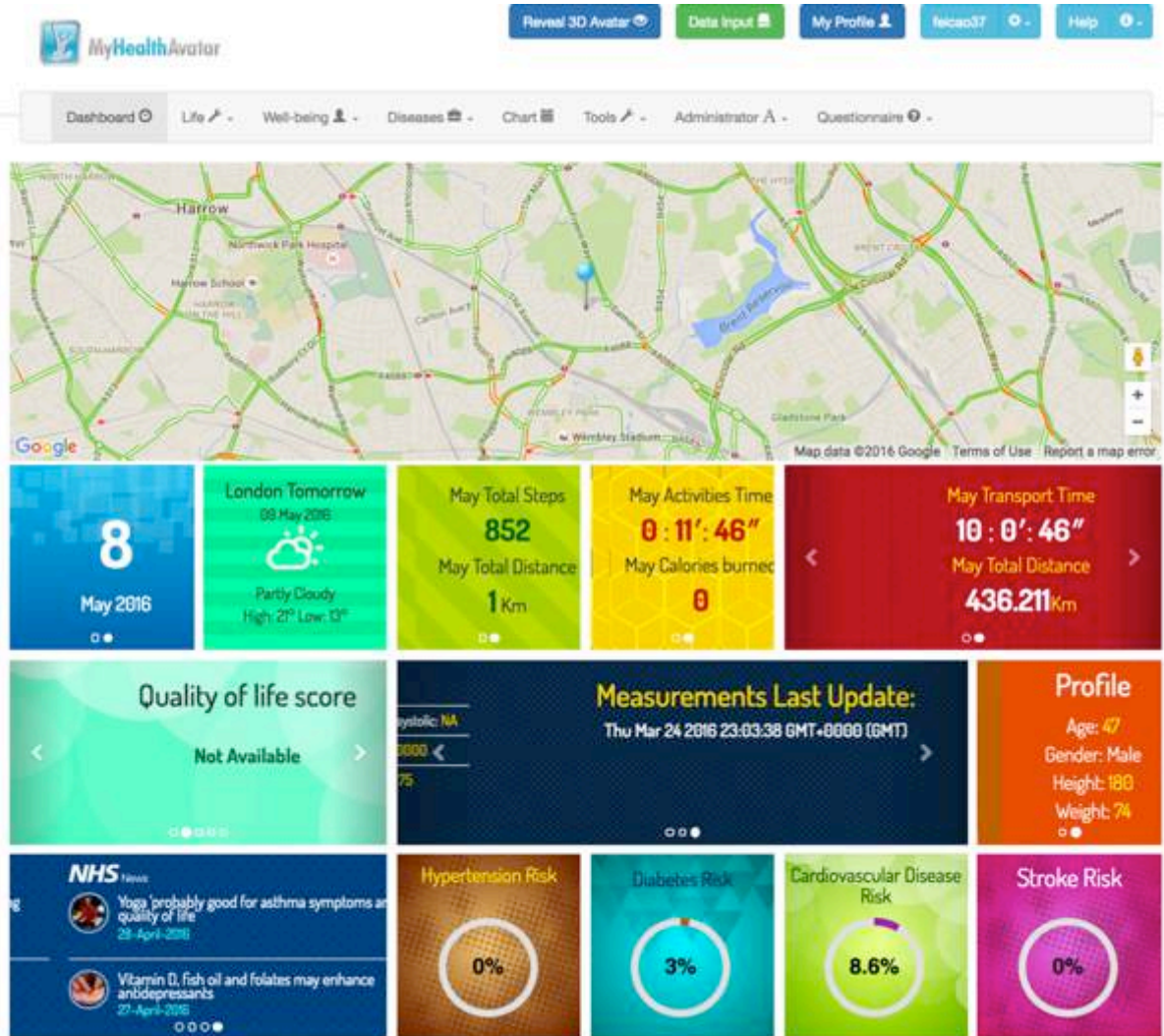


Figure 2.1 A: MyHealthAvatar Dashboard: an overview of your health information. The Dashboard shows your current location, the weather of your location and your overall activities and health information and assessment



2.2 Risks

The risk assessments indicate your risks in developing the following diseases:

- Cardiovascular – Your 10-year risk in developing cardiovascular. Note the model was only tested among individuals aged between 30 – 74 without CVD.
- Hypertension – Your 1-year, 2-year and 4-year risk in developing hypertension. Note the model as only tested among individuals aged between 20-69 without diabetes.
- Diabetes – Your 8-year risk in developing diabetes. Note the model was only tested among individuals aged between 45-64
- Stroke - Your 8-year risk in suffering stroke. Note the model was only tested among individuals aged between 55-84 without stroke.



2.3 Scores

Your health score consists of the following components for assessment:

- Quality of Life
- LifeSpace
- General health score
- Physical activity level
- Social engagement level



3 Life

3.1 Diary

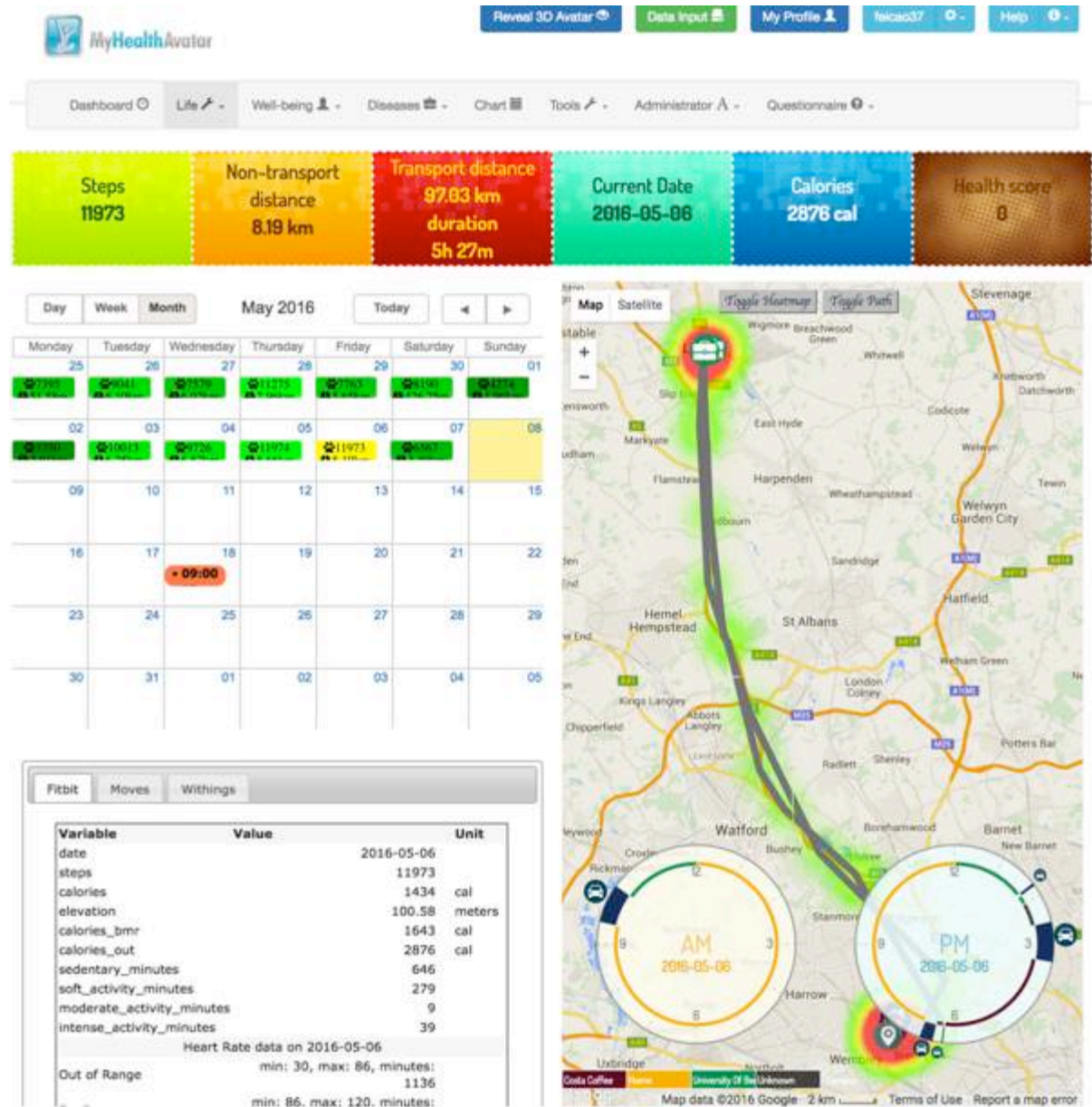


Figure 3.1 A Diary: The Diary shows your movement on a daily basis. The calendar shows the information of your daily step counts, travel distance, etc. By selecting one day from the calendar (which is then highlighted in yellow), the colour tiles on the top of the page display your information on the day, including step count, non-transport travel distance, transport travel distance, and the map on the right of the page displays your movement and activity of the selected day. Heatmap and clock-views are used to illustrate your movements and activities on the map throughout the day.



3.1.1 Place annotation in Diary

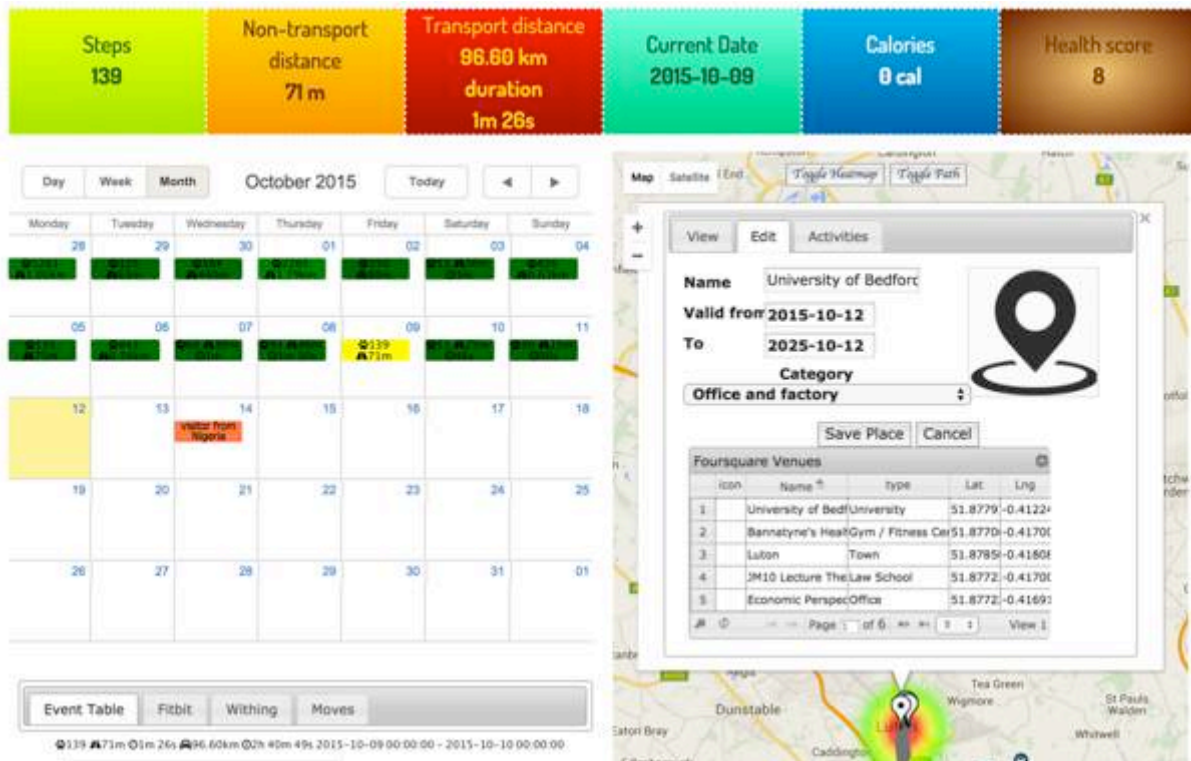


Figure 3.1 B: Place Annotation in Diary: You can also annotate your places directly on the map by clicking on the place icon and completing the annotation box. The annotation service is supported by the Foursquare APIs - a list of the Foursquare recommended venues is made available for you to select during the annotation. You can also annotate the places using your self-defined location names. To make your annotation results more meaningful, please also select a place type from the Category list



3.2 Activity Timeline



Figure 3.2 Activity Timeline: The interactive timeline allows you to view your activity data within a selected time period. It supports interactive visualisation of Fitbit/Withings sensor data as well as the Moves data. There are five different visualisation styles including activity stack, 24-hour activity, activity cloud, activity bubbles and movement-place



3.3 LifeTracker

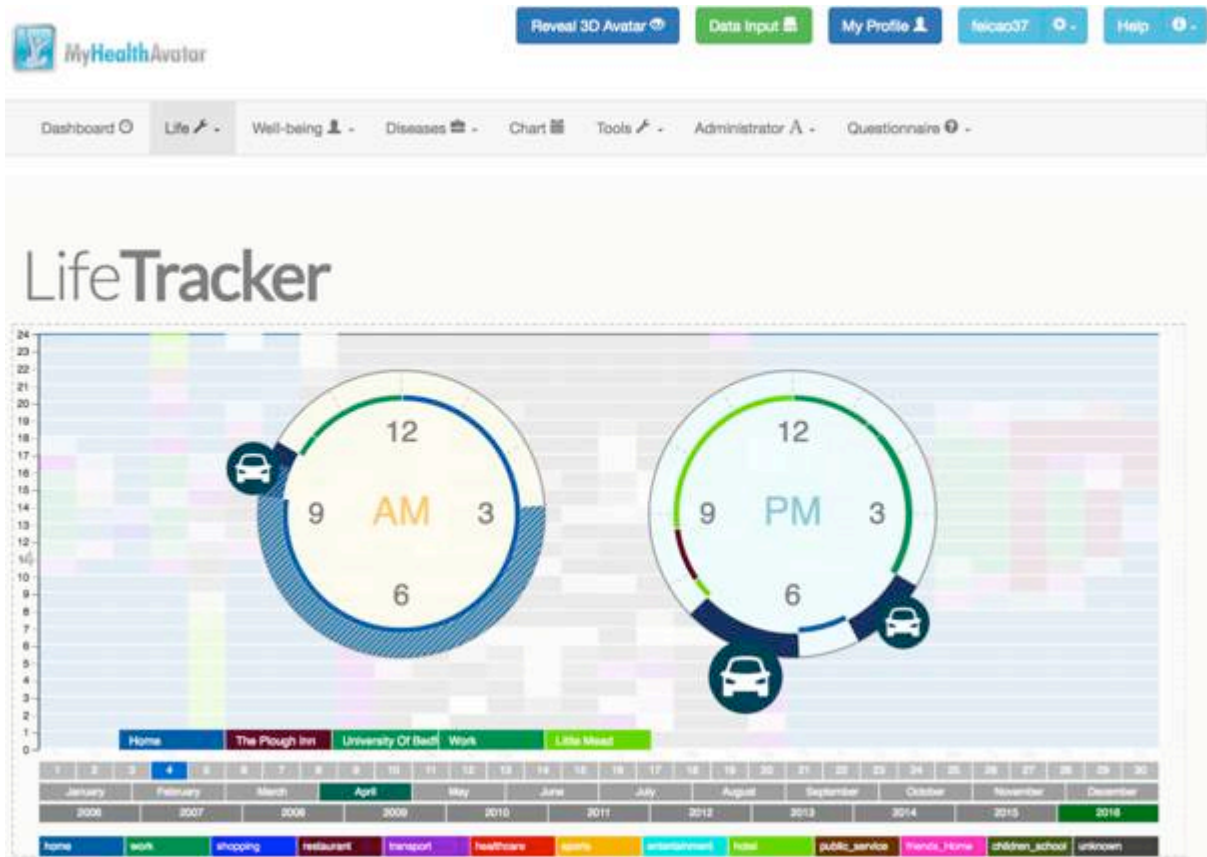


Figure 3.3 LifeTracker: This is a suite of techniques that presents lifestyle data and allows you to interactively look into your daily events, and weekly, monthly or yearly summary of life patterns and activities. It features a multi-scale timeline, the visualization of daily, weekly, and yearly timeline, as well as a clock view to show your daily movement and activities. Two 12-hour clocks are used in the clock view to represent the hours in the morning and afternoon, respectively. Hoovering your mouse on the clock can bring you information about your specific activities in the selected hours.



3.4 MyEvents

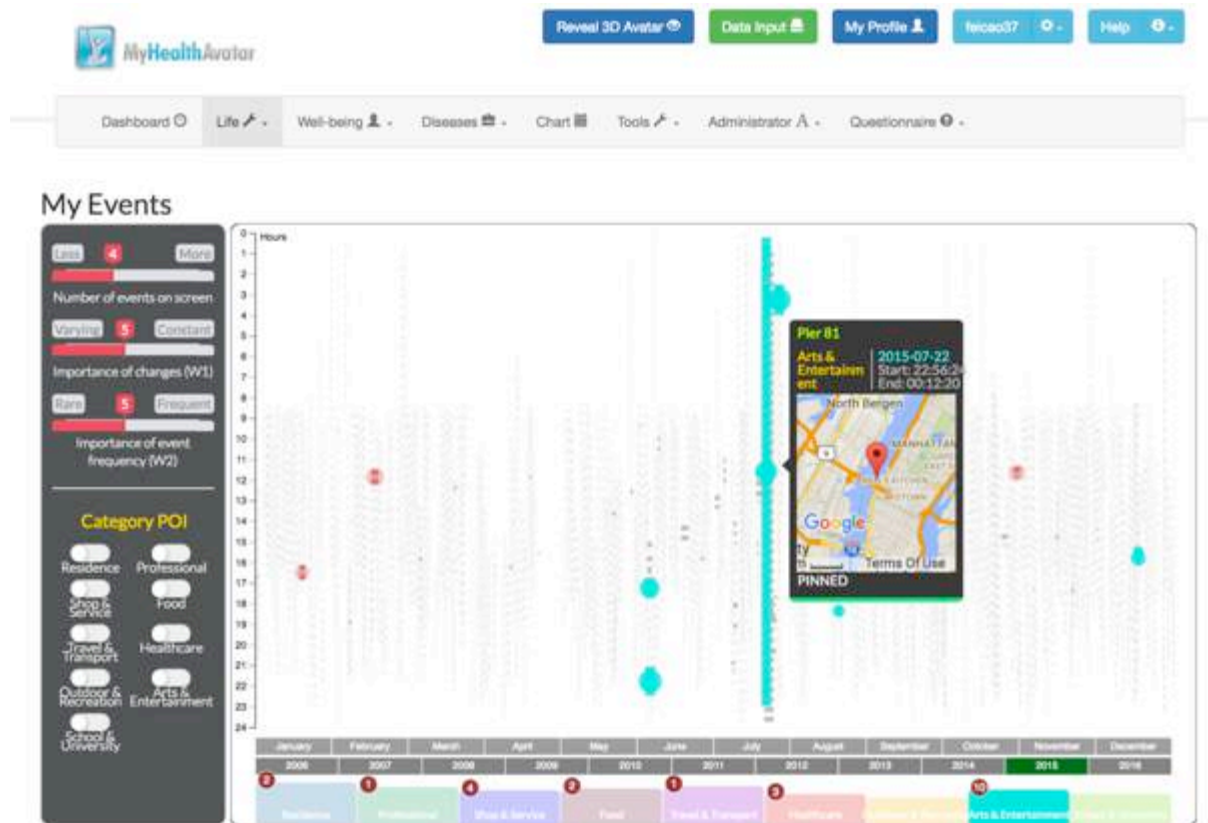


Figure 3.4 MyEvents: It introduces a novel event-ranking model, which allows you to efficiently query the events using a self-defined query strategy based on their preference of frequency, variance and event category using the panel on the left. The frequency preference enables you to make choices between frequent or rare events. The variance preference models the changes of event occurrence. And through the event category preference, you may set priority on the types of events they query. In addition, event aggregation and clustering are also used to facilitate the query. Through the interactive visualization interface, you can find the details of your events on the map.



3.5 LifeLoop

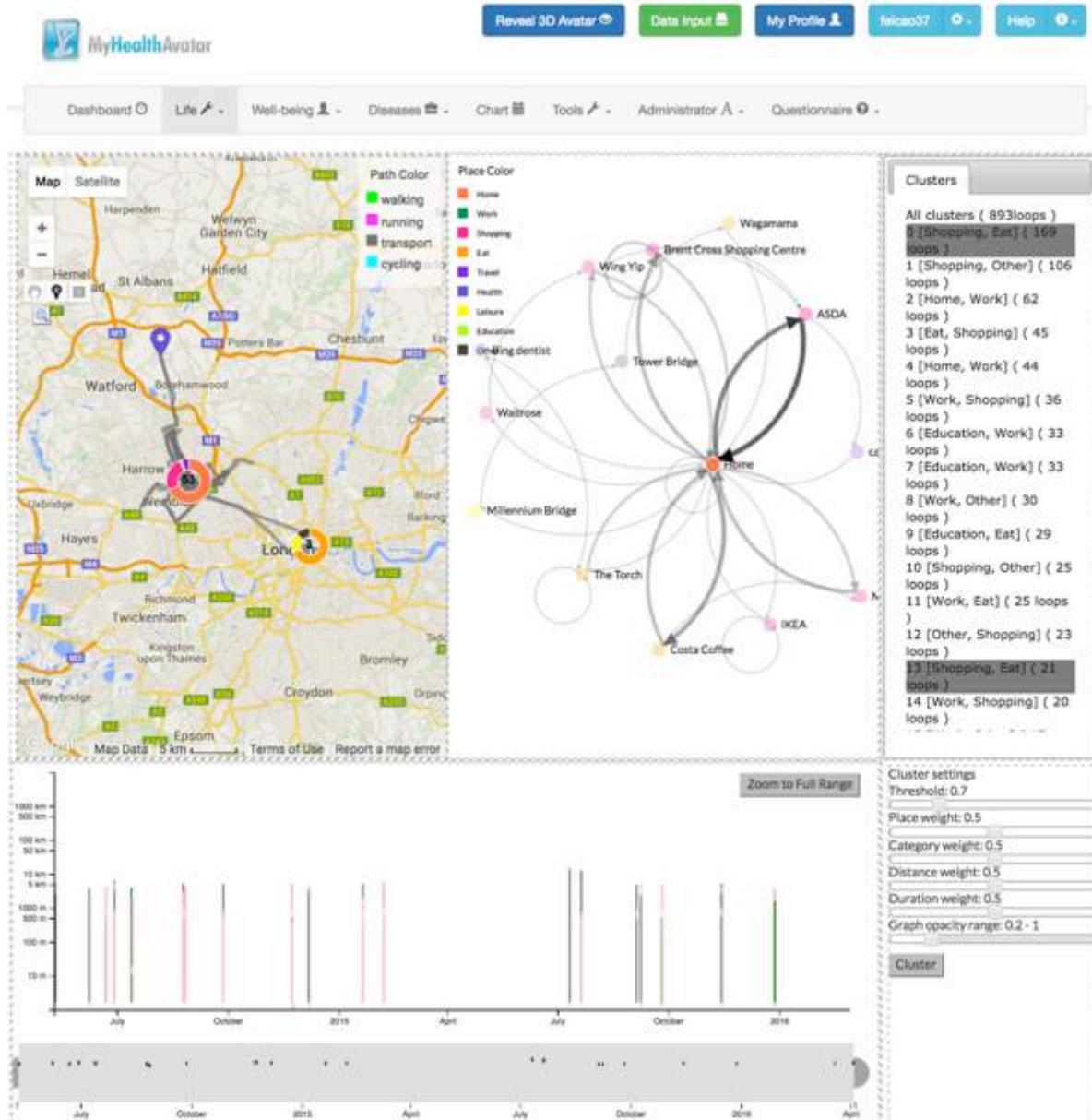


Figure 3.5 LifeLoop: This is a novel visual analytics tool for personal life pattern mining based on analysis of loop episodes in daily activity routes. Loops are closed episodes in an individual's activity route which may present valuable clues for pattern definition. With the strength of interactive visual analytics, LifeLoop allows you to easily reveal the frequent, rare or similar patterns as well as significant life patterns changes. The loop extraction and analysis itself is highly customizable by the user to provide on-demand pattern analysis. It helps you reminisce the past by providing visual pattern discovery and quick spatiotemporal search.



4 Charts

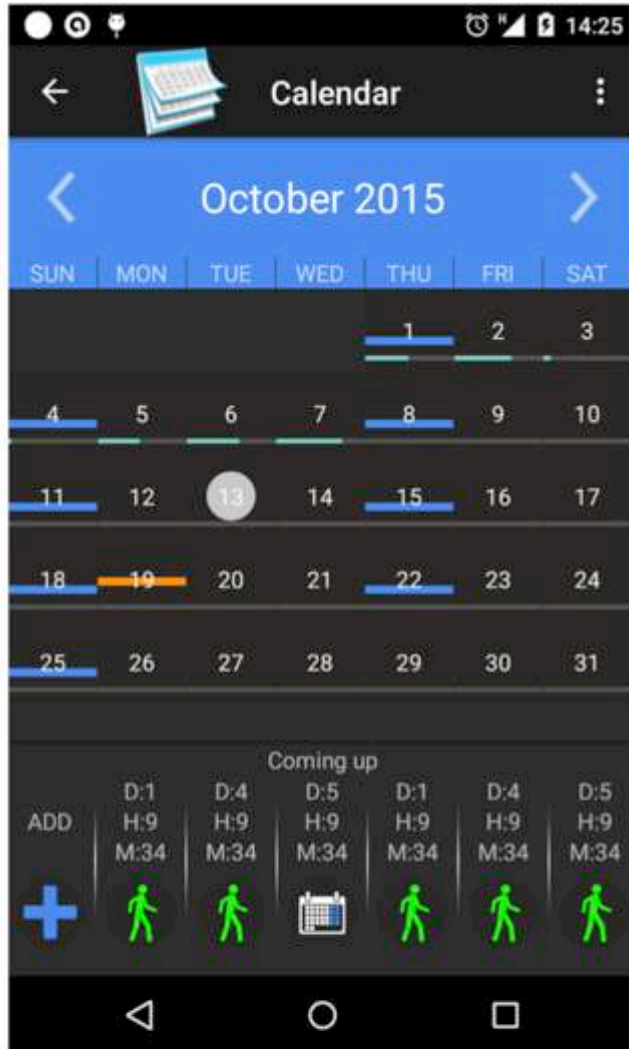


Figure 4 Charts: A timeline is a traditional method to visualise time-varying data and events in a linear layout which is suitable for continuous variables which may cover a relatively long period, such as health indicators and medical measurements. As the data records may cover a long time range, interactive techniques such as zooming and overview+details are integrated with the visualisation. Bar charts and lines are available for variable visualisation. As there may be a number of variables to select, a convenient drag-and-drop is used for variable selection.



5 Calendar

The Calendar can be used to view places you have visited and get a more detailed view of an individual day.



DAY VIEW

CLICK A DAY TO VIEW MORE DETAILED INFORMATION.

DATE CHANGE

CLICK THE NAVIGATION ICONS OR SWIPE TO CHANGE MONTH.

BLUE MARKERS

THE BLUE MARKERS INDICATE A SCHEDULED EVENT THAT IS SET TO REPEAT.

ORANGE MARKERS

THE ORANGE MARKERS INDICATE THAT A SINGULAR EVENT IS SCHEDULED ON THIS DAY.

COMING UP

THE BAR TO THE RIGHT OF ADD, SHOWS THE NEXT SIX EVENTS SCHEDULED TO HAPPEN, CLICKING THESE ICONS WILL DISPLAY A SUMMARY OF THE EVENT, CLICK AND HOLD ON THIS ICON TO LAUNCH THE EDIT DIALOG.

ADD AN EVENT

CLICK THE ADD BUTTON TO CREATE A NEW SCHEDULED EVENT.

ORANGE MARKERS

THE LIGHT BLUE PROGRESS BARS SHOW A SUMMARY OF YOUR DAILY GOAL COMPLETION.

Figure 5 Calendar on the mobile application



6 Day view and Statistics view

Your activity data can be viewed in chart and list form from several pages, including the Overview, Statistics overview and Day view.

OVERVIEW

ACCESS TO THE STATISTICS AND DAY VIEW VIA THE MAIN MENU ON THE LEFT

STATISTICS

STATISTICS SHOWS YOU A TIME RANGE OF ACTIVITY DATA WITH GOAL ACHIEVEMENT INDICATORS.

DAY VIEW, EVENTS

THE EVENTS TAB SHOWS YOU A CHRONOLOGICAL BREAK DOWN OF A SPECIFIC DAY.

DAY VIEW, CHARTS

THE CHARTS TAB ALLOWS YOU TO SEE ALL THE DAY'S ACTIVITY DATA IN A SIMPLIFIED CHART.

Figure 6: Day view and statistics view from the mobile application



7 Health Profile

Medical History Snapshot

Patient: Fel Cao
Address:
Date of Birth: 1990-08-01
Phone:

Primary Care: Lou Holmes
Address: 158 Aylsham Drive
Phone: 01895232445

Body Map

Condition

- 01** Glaucoma
Medications:
N/A
Updates:
Discovered in Dec 2018
- 02** Cancer
Medications:
N/A
Updates:
- 03** Gout
Medications:
N/A
Updates:

Figure 7 An interactive 2D body map to show your medical history: A health profile page presented in a professionally designed layout and graphical illustration for you to edit and view your health information, such as name, address, DoB, contact details, care providers, immunisation, allergies, medical history, medication history, and lab test results (e.g. blood test). You can print off this page in the event of visiting a new doctor



8 Share your Data



Figure 7 Sharing: A Community based Game for Health Competition



9 Contact

9.1 General and technical enquiry

Please email to info@myhealthavatar.org for further help and general enquiries about how to access and use the platform.

9.2 Project manager

Please contact the project manager to discuss further research and innovation collaborations.

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