

Katsukazan: An Intuitive iOS App For Informing People About Volcanic Activity in Japan

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ABSTRACT

Events in recent years have drawn attention to disaster risks related to volcanic activity in Japan. People having easy access to information regarding Japan's active volcanoes is of great importance — particularly as early work in our research indicated that visitors to Japan are unaware of these risks. Both disaster literature and interaction design theory emphasise considering the needs of users as part of the design process. Therefore, we are involving users at each step of the design process as we create an iOS application that allows people to explore and contextualise this information in a simple yet meaningful way.

CCS Concepts

•Information systems → Location based services; •Human-centered computing → Geographic visualization;

Keywords

mobile applications, spatial data, disaster management

1. BACKGROUND

Currently, digital information publicly available regarding volcanic activity lacks the kind of interactivity and relevancy that users expect from modern map apps, meaning it is not easily contextualised for a user's location or other points of interest. The Japan Meteorological Agency (JMA) website also states that its warnings regarding volcanic activity are “issued to residents via the media, prefectural offices and local municipalities” [3]. However, these avenues of communication may not be easily accessible or spatially contextualised for residents or visitors in Japan.

2. OUR APPLICATION

Using design guidelines from related research [2], our Katsukazan app uses data sourced from JMA via Japan's National Institute of Informatics. Information is available in both Japanese and English. The app was developed in Swift 2.0 [1], using Apple's Mapkit framework. Features such as search, geo-location (which shows user proximity to volcanoes), a standard map and satellite view (including a 3D ‘fly-over’ view on available devices), and zooming have been added to allow for easy spatial contextualisation of the information. We plan to release an Android version

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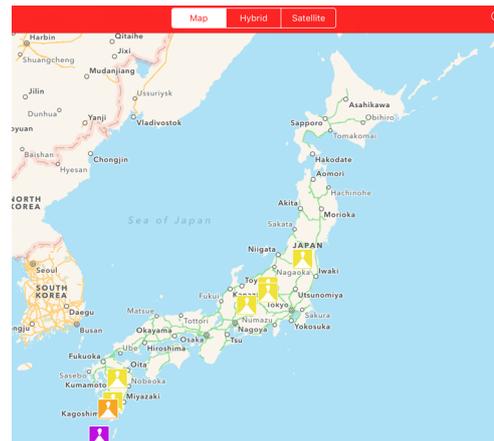


Figure 1: The map view of our Katsukazan app.

in the future. A web interface (<http://hazards.jp>) providing the same information is also available.

2.1 Initial user testing

Seven participants (Six residents of Japan, one visitor) undertook initial user testing of the app. 100% of users were confident using the app and no users felt that it was difficult to use. All users felt that the interface was consistent and was not complicated. The information itself was also considered useful by all users. Three users suggested adding user-sourced data (including photos) to the app, to supplement the official data.

3. CONCLUSION AND FUTURE WORK

Crowdsourcing will be added in the next iteration to gauge the usefulness of this feature in the context of volcano warnings. We may also create a VR/AR experience with the same data. However, using a design process inclusive of users — integral when presenting hazard information — means that only features driven by user input will be included in the next iteration of our app. ¹

4. REFERENCES

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