

**Title:** ARRF Davao Rescuer Application: An Android-Based System Recognizing, Detecting, and Matching Dog Faces Applying Two Image Processing Algorithms: Watershed and Speeded-Up Robust Features (SURF)

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## **EXECUTIVE SUMMARY**

This study focuses on the development of an Android-Based System applying two image processing. The researchers utilize ARRF Davao Rescuer Application to build an image matching system and the researchers also utilize Android Studio to compile the entire project and create an APK file. The researchers utilizing firebase as image storage of the application to be able to retrieve and saved image file online in matching uploaded images of missing pets and reported found pets and by utilizing ASP.net the researchers create a web portal for the admin to locate the reported stray and abused animals. The application database also utilizes SQLite to store the details of the users and pets. The researchers also use two images processing which is the Watershed for segmentation for extracting and Speeded-Up Robust Features (SURF) for image matching. The researchers provide Global Positioning System (GPS) using Geolocation API to locate by the admin the reported stray and abused pets. For the development of the project, the researchers use Agile Development Methodology a methodology based on Scrum model. Agile Development Methodology is suitable to change although minor changes later on. This will benefit all the dog lovers to locate their missing pets and ARRF Organization to also locate the reported stray and abused pets. The application will provide new learning of the importance of the pets.

**Keywords:** SQLite, Firebase, Image Processing, Application, Segmentation.