

WearApp

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Keywords: AI, machine learning, screening media, vibrating screens

ABSTRACT

WearApp provides expertise for assessing the degradation of removable screening media panels on vibrating screens right in a user's pocket. Through the WearApp application, users can simply take a picture of a panel using their mobile, enter some basic information and have the application assess the wear to provide a recommendation for whether the panel needs to be replaced.

Where traditional mechanisms for assessing panel wear only measure a few points across the panel face and rely on having personnel with specialised knowledge available to perform the assessment, WearApp uses machine learning models to analyse the entire panel face and support the user to make an informed decision.

The application works through analysing a panel image and using a model to automatically detect the corners of the panel. Given the known dimensions of the panel, this enables the application to calibrate the pixel size against a known reference. A second set of models then detect the apertures and measure their dimensions. With the aperture dimensions defined the application assesses the wear of the panel through referencing a stored 3D model of the aperture. Finally, the data from each aperture is collated and the wear of the entire panel face defined.

Because WearApp performs measurement of the entire panel face, it also allows the user to perform a more detailed analysis of the panel's wear profile. Where typically, the panel wear is only measured in a few locations, WearApp's analysis enables users to visualise the panel wear across the entire panel face, identifying areas of high wear that could be leading to premature panel replacement.

Additionally, because the entire panel face is measured the change in screening efficiency can be calculated accurately for the worn panel, even taking into account the impact of aperture pegging by small rocks.