**LOCATION BASED IMAGE SEARCH**

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ABSTRACT

Technology compressed in a smartphone opens up the door for a smart planet. The smaller these gadgets get and the more features we embed into them not only makes our life simpler but also more organized. With an aim of exploring the best of smart technology and putting it to the benefit of an individual we planned to develop a mobile application which provides the user with the key to indoor positioning and item identification. This application makes use of image recognition to register and identify items. It uses Image Feature Descriptors like SURF(Speeded-Up-Robust-Features) and FREAK(Fast-REtinA-Keypoints) for creating N-Dimensional descriptions of a particular item’s image. This is then stored in a centralized database. These descriptors are used for identifying known items/objects present in the image taken from the user’s camera. Combination of Basic Pattern Classifiers concepts like decision tree and Bayesian classifiers are used for the lookup purpose. After identifying the product/item its features/details, charecteristics etc. can be overlaid on the screen over its image, in the camera view. Additionally the alternative and complementary object/item can be suggested to the user.

The mobile application provides indoor location of the user. WiFi base stations clubbed with an efficient neural network is used for this purpose. The whole area is divided into grids/cells and according to the neural network output the approximate position of the user is estimated. The user can use this feature to navigate around the facility. The server offloads the computational works of image feature extraction and lookup from the mobile.

The server provides other details such as the indoor map, product characteristics and other related information on demand. It also allows the user to locate a particular item in the facility so that with the help of the indoor navigation aiding, he/she can reach the place where the item is.