

# Prevention of Food Wastage Using Mobile Application

Associate Professor V Gokula Krishnan (M.Tech., Phd), V Dhathanamoorthy, P Karan, N J Kishore  
Dept of Cse,  
Panimalar Institute of Technology, Chennai, India

**Abstract-**According to different sources, 25% to 40% of food products are wasted in the world. There is something that we still don't see: food wasted by restaurants, shops or industries. There is also something we can see: food wasted by ourselves. This is the range focus of communities, through the management of wasted products of catering firms. Now a days People are aware of importance of food but there are no platform to share information about the excess of food available in the particular restaurants, shops and even in our homes for non-profitable organizations to offer food to the needy. We propose an android application in which the registered user can post the extra available food in their community for other users to come and get use of it by taking the extra food to the people in need.

**Keywords-**Food donator, Food wastage problems, collecting foods

## I. INTRODUCTION

The sharp increase in the amount of wastage in terms of food makes the donation need for charity. This paper introduces 'Helping Hands,' a new internet-based program that provides all poor people / organization with a forum to donate old stuff and leftover food. This offers details on the reasons for creating such an application, thus explaining the current donation program and how the application will be Proposed company functions to boost society. The company is known to be an efficient way of donating items over the internet to organizations etc. It shows the potential for reducing food waste and then the other stuff.

Food wastage is a troubling problem in densely populated countries like India. The highways, trash cans, and landfills have enough evidence to prove it. Marriages, canteens, pubs, social get-togethers and family events eliminate too much of the food. Food waste is an indication not only of hunger or pollution but also of many economic problems. Due to the rapid changes in habits and lifestyle, the high standard of living has led to the wastage of food . Rather than wasting these items we can use them by donating them to different organizations including orphanages, old age homes, etc. The product is an android application based on the internet that basically targets charity through donations.

Most people don't know how much food they throw away every day — from discarded leftovers to rotten fruit. Approximately 95 per cent of the food we throw away ends up in landfills or incinerators. We got more than 35 million tons of food waste disposed of in 2013. A lot of people like to contribute items to groups in need. Also, many organizations want to ask for different things they

need, such as clothes, food grains, books, utensils, etc., but there is no source available through which they can meet their needs. Thus, an Android application has been developed through which people can donate items according to their ability and the application also allows organizations to submit their requests, i.e. items that they require, if any. Today, the majority of the population uses smart phones with an active Internet connection, which is the basic requirement for proper functioning of this product.

## II. RELATED WORK

An agricultural country like Bangladesh is facing insufficient electricity production system. All of the expert bodies are trying to upgrade our electricity production system also trying to create various scopes for producing electricity. Therefore, we are offering a grid connected food wastage based biomass power plant because we have a lot of wastage and maximum of the wastage are vegetables and foods. We proposed renewable energy based power plant because it is environment friendly with less emission of carbon about 2% as well as others conventional power plant. For design and analysis, we have chosen Chittagong City Corporation because there are lot of food wastage in Chittagong. Also, the system is connected to national grid for upgrading our nation

Food wastage is a huge problem arising in today's world. It has become a serious issue in our society in the last years that affects "poor and rich countries" equally and according to the Food and Agriculture Organization (FAO) almost half of all produced food will never be consumed. By wasting food we also waste the "time and energy" that we have used to produce the food and as well our "natural resources" and the "limited available

agricultural land" will be used up which could be handled in a much better and sustainable way. Additionally, waste has a strong financial impact and affects the environment including the overall greenhouse gas emission. To avoid all such situations we are going to implement IOT Based Smart Garbage and Waste Collection bins (SGWC). Our paper idea is based on creating a social awareness to reduce food wastage through measuring and displaying the amount of food wasted and recycling the wasted food using embedded systems. The Food waste disposal machine (FWDM) used here recycles the wasted food to make fertilizer at planting

An intelligent logistics system is an important branch of intelligent transportation systems. It is a great challenge to develop efficient technologies and methodologies to improve its performance in meeting customer requirements while this is highly related to people's life quality. Its high efficiency can reduce food waste, improve food quality and safety, and enhance the competitiveness of food companies. In this paper, we investigate a new integrated planning problem for intelligent food logistics systems. Two objectives are considered: minimizing total production, inventory, and transportation cost and maximizing average food quality. For the problem, a bi-objective mixed integer linear programming model is formulated first. Then, a new method that combines an constraint-based two-phase iterative heuristic and a fuzzy logic method is developed to solve it. Computational results on a case study and on 185 randomly generated instances with up to 100 retailers and 12 periods show the effectiveness and efficiency of the proposed method

### III. FOOD WASTAGE DETECTION SYSTEM: PROTOTYPE, ALGORITHM AND DISSEMINATION OF FOOD WASTAGE INFORMATION

Food recognition is a key component in evaluation of everyday food intakes, and its challenge is due to intra class variation. In this paper, we present an automatic food classification method, Diet Cam, which specifically addresses the variation of food appearances. Diet Cam consists two major components, ingredient detection and food classification. Food ingredients are detected through a combination of a deformable part-based model and a texture verification model. From the detected ingredients, food categories are classified using a multi-view multikernel SVM.

we developed a practical magnetic metallic contaminant detector using three high-Tc RF superconducting quantum interference devices (SQUIDs) for food inspection. Finding small metallic contaminants is important for food safety. When contamination occurs, the manufacturer of the product suffers a great loss to recall the tainted

products. Therefore we developed a practical food contaminant detection system based on high-Tc RF SQUIDs. The system was covered with waterproof stainless steel plates, and the outer dimensions of the system were 2450 mm (W) × 714 mm (D) × 1555 mm (H). An acceptable inspected object size was 150 mm (W) × 100 mm (H), which is sufficiently large for practical food inspection. A digital filtering technique has been newly introduced to reduce noise. As a result, the signal-to-noise ratio (SNR) was dramatically improved, and we were able to robustly detect a steel ball as small as 0.3 mm in diameter.

Acting on the food wastage, can be considered to be having a significant impact on achieving the sustainability goals and can also be a vital auxiliary measure to counteract the imbalance in the global food availability and distribution. This paper tries to summarize from the available data, the global, the national and the community level food wastage scenarios. With a focus on the food wastage due to 'over consumption' as one of the high potential source for reduction and the behavioral aspects and habits as obstacles to the goal of sustainability, describes a study conducted by students in a local community to identify and quantify the avoidable food waste at consumer level and proposes that awareness of sustainable living patterns as a superordinate goal.

The deliberate contamination of food is well recognized as a major public health threat. A food supply chain offers several possible targets for the intentional insertion of a biological or chemical toxin by a perpetrator, which can result insignificant morbidity and mortality. We assume that both manager(defender) of the food production facility and perpetrator(attacker) select actions at each of a possibly countable number of decision epochs, based on possibly inaccurate real-time observations of the other agent. The defender's objectives are to maximize long-run expected total discounted system productivity and to minimize the long-run expected total discounted consequence of an attack. The attacker's objective is to maximize its reward, which combines the long-run expected total discounted consequence of an attack with a penalty if the attack is unsuccessful. We model this problem as a leader-follower, two-agent partially observed Markov game. We show that system risk is dynamic, determine the impact of observation accuracy on facility productivity and risk, thus providing a measure of the value of information, and perform a sensitivity analysis on key parameters. We present an illustrative example involving a liquid egg production system.

### IV. SYSTEM DESIGN

System design is the process of designing the architecture, modules, interfaces and data for a system to satisfy specified requirements. System design could be seen as the application of systems theory to product development

.There is some overlap with the disciplines of system analysis, system architecture, system engineering .

### 1. Architecture

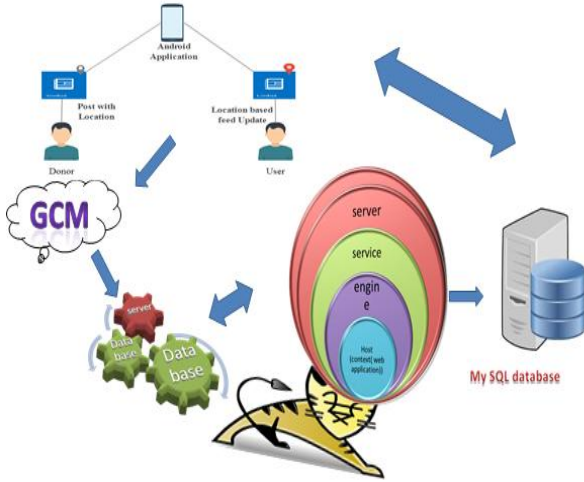


Fig 1 Architecture.

### 2. Cost Analysis

The initial cost of the system is \$40,025,000 and the annualized cost is \$2,924,692.00. Table IX.

Shows net present cost. Table X. Shows annualized cost. Fig. 7 shows total Cost Summary of the system

Table 1 Net Present Costs.

Component Initial	Capital(\$)	Replacement (\$)
Biomass Technology	10,000,000	13,675,996.84
Biomass Technology 1	10,000,000	13,675,996.84
Biomass Technology 2	10,000,000	13,675,996.84
Biomass Technology 3	10,000,000	13,675,996.84
National Grid	10,000,000	0.0
System	40,025,000	\$54,703,987.34

Table 2 Annualized Costs.

Component Initial	Capital(\$)	Replacement (\$)
Biomass Technology	730,716.30	999,327.38
Biomass Technology 1	730,716.30	999,327.38
Biomass Technology 2	730,716.30	999,327.38
Biomass Technology 3	730,716.30	999,327.38
National Grid	1,828	0.0
System	\$2,924,692.00	\$3,997,309.53

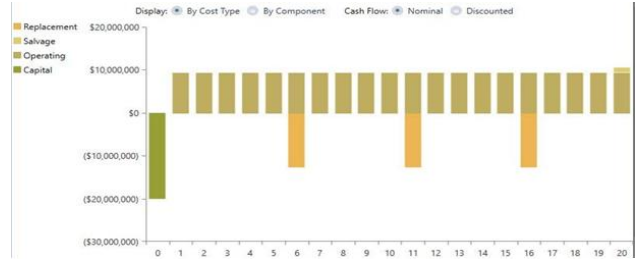


Fig .2 Cost Analysis.

## V.CONCLUSION

We propose an android application in which the registered user can post the extra available food in their community for other users to come and get use of it by taking the extra food to the people in need. First, the new user needs to sign up and then only, the user can view the updates from other user about the available food in the specific restaurant or shop. The application is user friendly because of its attractive feature of showing the posts based on the user location and also the food donor can indicate other users about the food availability status.

## REFERENCES

- [1] M. Ghazal, S. Ali, F. Haneefa and A. Sweleh, "Towards smart wearable real-time airport luggage tracking", 2016 International Conference on Industrial Informatics and Computer Systems (CIICS), 2016.
- [2] M. Ghazal, M. Akmal, S. Iyanna and K. Ghoudi, "Smart plugs: Perceived usefulness and satisfaction: Evidence from United Arab Emirates", Renewable and Sustainable Energy Reviews, vol. 55, pp. 1248-1259, 2016.
- [3] M. Ghazal, A. Amer and A. Ghayeb, "Homogeneity-based directional sigma filtering of video noise", IEEE International Conference on Image Processing 2005, 2005.
- [4] Developer.android.com. (2017). Android, the world's most popular mobile platform Android Developers. [online] Available at: <https://developer.android.com/about/index.html> [Accessed 14 Dec. 2017].
- [5] Betz A., Buchli J., Gobel C. and Mulle C., "Food waste in the Swiss food service industry–Magnitude and potential for reduction," Waste Management, pp. 218-226, January 2015.
- [6] Leejiah J. Dorward, "Where are the best opportunities for reducing greenhouse gas emissions in the food system (including the food chain)? A comment," Food Policy, vol. 37, no. 4, pp. 463-466, August 2012.
- [7] Neo Chai Chin, "An 11th Hour answer to cutting down on food waste," 07 November 2016. [Online]. Available: <http://www.todayonline.com/singapore/11th-hour->

- answer-cutting-downfood-waste. [Accessed 14 December 2017].
- [8] Paola Garrone, Marco Melacini, and Alessandro Perego, "Opening the black box of food waste reduction.," *Food policy*, vol. 46, pp. 129-139, 2014.
- [9] Kumm M, de Moel H, Porkka M, Siebert S, Varis O, and Ward PJ., "Lost food, wasted resources: Global food supply chain losses and their impacts on freshwater, cropland, and fertiliser use.," *A science of the total environment*, vol. 438, pp. 477-489, September 2012.
- [10] Joris Tielens and Jeroen Candel, "Reducing food wastage, improving food security?," *Food & Business Knowledge Platform*, 2014.