

# **BUSITEMA UNIVERSITY**

## **FACULTY OF ENGINEERING**

### **DEPARTMENT OF COMPUTER ENGINEERING**

#### **AUTOMATIC FISH FEED DISPENSING SYSTEM**

**BY**

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**Project report submitted to the department of computer engineering as a partial fulfillment of the requirements for the award of a bachelor's degree in computer engineering**

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## DECLARATION

I, **ODISI VALERIAN IMERI**, hereby declare that this project report is completely based on my research work except for citations and quotations which have been specifically acknowledged. It has not been submitted to any other examining body or academic institution for any academic award.

Signature ..... 

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## APPROVAL

This is to certify that the Project under the title "*Automatic Fish Feed Dispensing System*" has been done under my supervision and is now ready for examination.

Mr. LUSIBA BADRU

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Signature: .....

Date: .....

## **ACKNOWLEDGEMENT**

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Above all, I acknowledge the Almighty God for the gift of life, wisdom, knowledge and understanding for without Him, I would not have been able to accomplish this project report.

## **DEDICATION**

I dedicate this report to my beloved parents **Mr. IMERI BISANSIO** and **Mrs. APADET ESTHER DORINE** and my brother **OBUKUI PIUS IMERI**. Your contributions to my education has been wonderful, encouraging and promising a bright future in my life. I love you all and May the almighty God bless you exceedingly and reward you abundantly and I promise never to forget you for the unceasing love and care you have always shown me. Glory be to God Almighty.

## **LIST OF ABBREVIATIONS**

<b>LCD</b>	Liquid crystal Display
<b>AC</b>	Alternating current
<b>DC</b>	Direct current
<b>PCB</b>	Printed Circuit Board
<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>PC</b>	Personal Computer
<b>PLC</b>	Programmable Logic Controller

## **ABSTRACT**

Fish farming has become a valuable business activity, as it promotes food security and poverty eradication in developing countries. For there to be a large harvest of fishes in this business, it is absolutely imperative to ensure that these fishes are being fed regularly to achieve proper growth and development.

With an enhanced innovation such as Automatic Fish Feed Dispensing System, aqua cultural practice is improved by making it less laborious to the farmer. The inclusion of this system in the cost of fish production has reduced to adequate distribution of feed at proper scheduled time as well as decreasing labour requirement.

This system dispenses the right amount of food to the pond according to the fish feeding times and alerts the owner about the situation in the pond.

This system has successfully devised a means whereby fish farmers can effectively feed their Fish while cutting down on the number of workers employed in their farms, thereby reducing the cost of production. From the various analysis carried out, it can be said that the main objectives of this system were successfully achieved.

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## CHAPTER ONE

### 1.0 Introduction

This chapter comprises of the background, problem statement, justification and objectives of study.

### 1.1 Background

Uganda produces up to 15,000 tonnes of fish from aquaculture, including production from small-scale fish farmers, emerging commercial fish farmers and stocked community water reservoirs and minor lakes. There are an estimated 20,000 ponds throughout the country with an average surface area of 500 m<sup>2</sup> per pond. Production ranges between 1,500 kg per hectare per year for subsistence farmers to 15,000 kg per hectare per year for emerging commercial fish farmers [1].

Food and feeding are the keywords of growth and production, their management being one of the main challenges for aquaculture development. The adjustment of food delivery to match fish appetite plays a key role to maximize the income or benefit for aqua industrialist. Related to economic aspect, especially for highly invested aquaculture project, the control of fish feeding will determine the survival of the company involved. The correct management of fish feeding also link to small aqua project which cannot be ignored as this matter contributes on how they can return good profit from these aqua activities. Conditions which prevail in intensive aquaculture make this problem complicated. These difficulties can delay the adjustment of food delivery to match variation in fish demand, leading to environmental pollution when overfeeding fish and growth loss when underfeeding fish. The effects are the same whether the purpose is for industry or even small aqua activities such as aquarium and pond.

The relative feed efficiency of fish farming is a complex subject that has not yet been fully analyzed with current technology, so the only source that can be used to level the effectiveness of a feeder is from analytical data which differs from certain research and thus, is suitable for the same parameter only [2]. The data sometime does not fit for universal use that consists of additional or different parameter such as type of fish, size, place, surrounding and others. It is the purpose of the present invention to provide an automatic feeding device which meets the above feeding requirements thus largely eliminating the need in expensive, experienced labor, thereby reducing the cost of raising fish. The cost of feed is usually the greatest operating cost in aquaculture, which may account 40% or more of total operating cost in an eel culturing system. It has been estimated that over 60% of the feed placed into aquaculture system ends up as particulars.

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