

Framework to Detecting the Density of mosquitoes at Dumpyard

Under the guidance of
Mr.G Nageswara Rao_{MTech}
Associative Professor

Presented By:

| | |
|---------------|--------------|
| K Greshma Sri | (19K61A1223) |
| V Lalitha | (19K61A1252) |
| P Satish | (19K61A1242) |
| M Bharath | (19K61A1234) |

Batch No:1923ITP014



INSTITUTE OF
TECHNOLOGY &
ENGINEERING
TADEPALLIGUDEM
WEST GODAVARI DIST.A.P



K GRESHMA SRI(19K61A1223)

| R .no | Name | Comments | Action Taken |
|-------|---------------------------|--------------------------------------|---------------------------------------------|
| R1 | Dr K. Subhash Bhagavan | Refer more literature survey papers. | more literature survey papers are referred. |
| R2 | Dr A V N. Chandra Shekhar | Asked about technologies. | New technologies are improved. |
| R3 | Mr G. Nageswararao | Changes made from Existing system. | New existing system implemented. |
| R4 | Mr U. Srinadh | Detail information of application | more information gathered. |
| R5 | Dr A V S. Siva Rama Rao | refer more tools are used. | more tools are referred. |

V LALITHA KUMARI(19K61A1252)

| R .no | Name | Comments | Action Taken |
|-------|---------------------------|------------------------------------------------------------------------|-----------------------------------------------|
| R1 | Dr K. Subhash Bhagavan | Make a detail analysis on different algorithms. | Improved more algorithms. |
| R2 | Dr A V N. Chandra Shekhar | Referred more and more related papers. | recent papers referred. |
| R3 | Mr G. Nageswararao | Follow Edureka iot training class on youtube make a detailed analysis. | learned more iot training class. |
| R4 | Mr U. Srinadh | Make a detailed analysis on methodology. | Improved more detail analysis on methodology. |
| R5 | Dr A V S. Siva Rama Rao | Give clear idea on your project. | Detailed information on project. |

P SATHISH(19K61A1242)

| R .no | Name | Comments | Action Taken |
|-------|---------------------------|---------------------------------------|------------------------------------|
| R1 | Dr K. Subhash Bhagavan | Add some more referred papers. | referred papers are added more. |
| R2 | Dr A V N. Chandra Shekhar | Clear idea about your project. | Detailed information on project. |
| R3 | Mr G. Nageswararao | Asked about pproposed system. | Improved presentation techniques. |
| R4 | Mr U. Srinadh | What are the algorithms are used. | some detailed algorithms are used. |
| R5 | Dr A V S. Siva Rama Rao | Explain in detail about your project. | In detail information gathered. |

M BHARATH(19K61A1234)

| R .no | Name | Comments | Action Taken |
|-------|---------------------------|-------------------------------------------|---------------------------------------------|
| R1 | Dr K. Subhash Bhagavan | Asked about technologies and methodology. | get more information about on technologies. |
| R2 | Dr A V N. Chandra Shekhar | More information about algorithms. | Gathered more detail information. |
| R3 | Mr G. Nageswararao | Clear idea of about process. | . In detail information on project. |
| R4 | Mr U. Srinadh | Referred more papers. | More techniques are referred. |
| R5 | Dr A V S. Siva Rama Rao | Increase knowledge on survey papers. | More papers are referred. |

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Abstract

Now a days, many people are infected, and more than one million people die from vector-borne diseases including malaria, dengue, chikungunya ,etc. The best-known disease vector, mosquitoes are geographically widespread throughout the world. It is important to raise awareness about proliferation by monitoring its incidence, especially in poor regions. The goal of this project is to use an acoustic sensor to determine the density of insects or mosquitos. Using mosquito frequency to determine where pesticides should be sprayed and how much pesticide should be sprayed. Low-power, low-cost, and no human intervention in a resource-constrained environment.

problem statement

- The theme of this project is to identify the density of insects or mosquitoes by using an acoustic sensor.
- By using mosquito frequency to identify in where the pesticides should be sprayed and estimate the in much quantity of pesticides should be sprayed.
- Low-power, low-cost and without human intervention in resource-constrained area.

Introduction

- Environmental changes are causing an increase in the number and geographical spread of vectors. Mosquitoes in particular transmits far more diseases than other insects.
- According to the World Health Organization (WHO) mosquito bites result in the deaths of more than one million people every year with the majority of these deaths due to malaria. The WHO estimates that between 300 and 500 million cases of malaria occur each year and a child dies from malaria every 30 seconds. Around the world, malaria transmission occurs in 97 countries.

Introduction(cont)

- The poorest segments of society and least-developed countries are the most affected. People from poor communities with little access to healthcare and clean water sources are also at risk.
- Countries affected by malaria turn to control rather than eradication. Vector control means decreasing contact between humans and disease carriers on an area-by-area basis. It is therefore crucial to be able to detect the presence of mosquitoes in a specific area. This paper presents an approach Low-power, low-cost and without human intervention in resource-constrained area.

Literature Survey

paper1

| | |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Title | Flying Insect Identification Based on Wing-beat Frequency using Modified SVM Classifier. |
| Abstract | This paper mainly focusses on developing a complete digitized tool that includes process of detecting and-monitoring insect species that threaten biological resources, in both productive and native ecosystems, particularly forpest management and biosecurity. |
| Methodology | <ul style="list-style-type: none">• 1 Dataset – ESC-50 (Environmental Sound Classification)• Preprocessing• Short Time Fourier Transformation (STFT)• Feature Extraction |

Literature Survey1...

| | |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Algorithms | Clustering Algorithm,SVM classifier. |
| Results | The files of entire database is categorized as training, testing and validation sets in the ratio of 50:25:25 percentage from the dataset.Accuracy recorded using modified SVM classifier on ESC-50 .It results that modified SVM classifier gives more accuracy than SVM classifier. |
| Conclusion | A framework has been developed to identifyinsect — non-insect using modified Support Vector Machine classifier. The accuracy in recognition ofthe species based on its sound as insect or non-insect is improved while using modified SVMclassifier.. |

Literature Survey

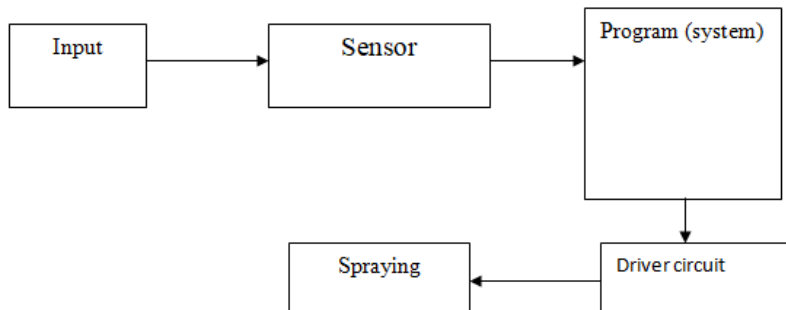
paper2

| | |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Title | classifying mosquito wing beat sound tiny ml. |
| Abstract | Automatically identify mosquito species by their wing beat frequency based on TINY ML devices.The proposed solution is low-power,low-cost and can run without human intervention in resource-constrained area. |
| Methodology | <ul style="list-style-type: none">• data acquisition• data prepossessing• data preparation• feature generation• model design• model training• model traing |

Literature Survey1...

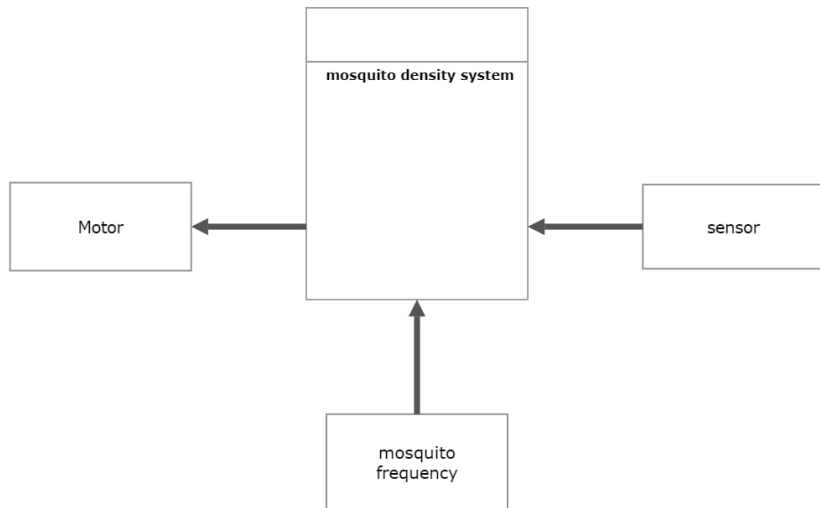
| | |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Algorithms | acoustic sensors. |
| Results | The first is cost Another important parameter is power consumption. We have shown that power consumption for both inference and inference plus transmission allow for battery-operated devices for long periods of time. This means that the solutions are field-ready for our application. The third parameter to be considered is flexibility. |
| Conclusion | To optimize power consumption by developing our bare-bone embedded device to only measure audio signals and send results via LoRaWAN. |

Architecture diagram



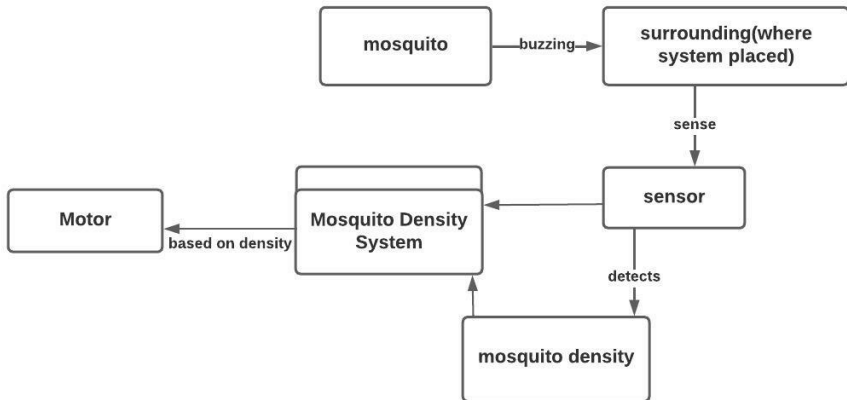
Design of Project

DFD Daigram level-0



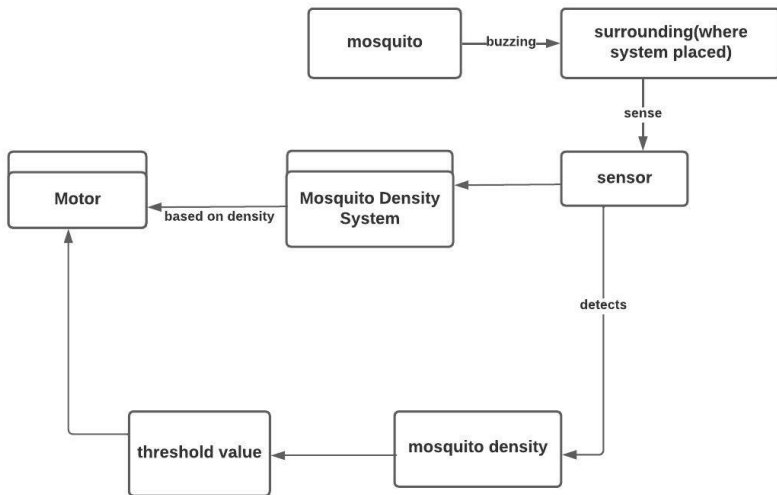
Design of Project

DFD daigram level-1



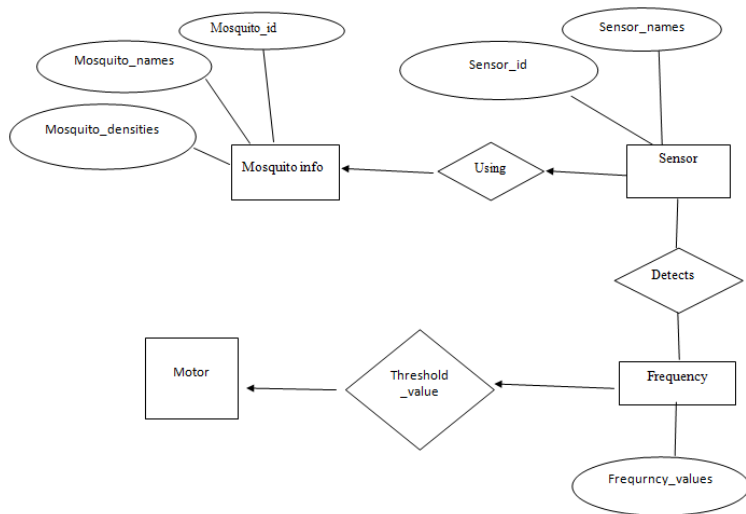
Design of Project

DFD Daigram level-2

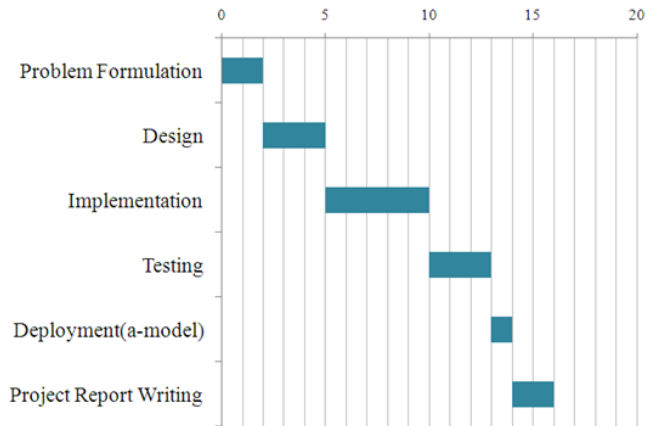


Design of Project

ER Daigram



Plan of Action



NUMBER Of Weeks

Conclusion

Mosquitoes are the most well-known disease vectors, and they are found all over the world. It is critical to raise awareness about proliferation by monitoring its prevalence, particularly in impoverished areas. We proposed system is iot sensors such as acoustic sensors to identify mosquito species density and using mosquito frequency to identify in where the pesticides should be sprayed and estimate the in much quantity of pesticides should be sprayed. Low-power, low-cost, and no human intervention in a resource-constrained environment.

Any Queries!

Thank you!