Elephant detection and localization using infrasound

Outline of the thesis

by

K.K.T.P Ranathunga

(Registration No : 2012/CS/112, Index No : 12001122)

tharindu.prf@gmail.com

Submitted in partial fulfillment
Of the requirements of the
B.Sc in Computer Science 4th Year Individual Project
(SCS4124)

Supervised by

Dr. Chamath Keppitiyagama

University of Colombo School of Computing
Colombo 7
SRI LANKA

November 11, 2016

Chapter 01: Introduction.

- Goal and objectives.
- Research question.
- Research question.
- Hypothesis.

Chapter 02 : Literature Review.

Related works on :

- Biological researches on elephant communication.
- Behavior of infra sound waves.
- Sound localization.
- Signal classification.
- Acoustic detection of elephants.
- Infra sound recording devices

Chapter 03 : Design and Methodology.

- Introducing Elocate sensors.
- Overview of sound localization.
- Comparison of localization techniques.
- Application of cross correlation using Elocate sensors.
- Feature extraction.
- Signal enhancement.
- Classification using SVM.

Chapter 04 : Implementation.

- Electronic circuit of the sensors.
- Noise reduction techniques.
- Implementation of localization.
- Data collection.
- Implementation of pre processing.
- Training SVM.
- Testing the model.

Chapter 05 : Results and Evaluation.

- Results of each experiment conducted.
- A comprehensive analysis on results.

Chapter 06 : Conclusion and Future Works.

- New possibilities discovered.
- Problems encountered.
- Increasing the accuracy of detection and localization.
- Summary