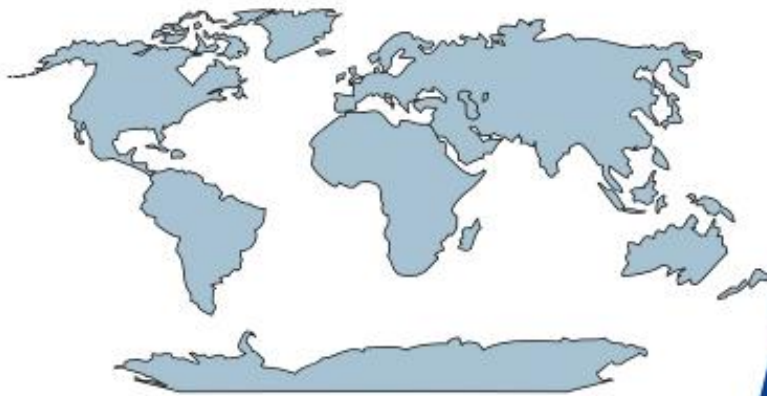


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**IMPROVING EMOTIONAL QUOTIENT OF HUMANOIDS WITH THE USE OF THERMOLOGY
AND THERMOGRAPHY**

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ABSTRACT

In this work I have followed a multidisciplinary approach to study the interaction for emotions recognition in the humanoids. My ultimate goal is to explore if a humanoid can be used to interact with humans and recognize their emotions through some cues and bio-signals. In particular, this work is focused on analysing human emotions. Human body temperature plays an important role in recognizing and understanding emotions by robots. In this paper a detailed study has been proposed on how our body temperature plays an important role in our different moods and emotions. And how we can formulate it for the robots to analyse the emotions accurately. In between the sections, I have explained a way in which imaging technology can be used to add some emotions recognition ability to the robots. The obtained observation can adequately elaborate how a humanoid can have ability to detect emotions and moods of a human being and act accordingly.

Keywords – Thermal Technology, Image Processing, Humanoids, Artificial Intelligence

INTRODUCTION

We all know that nowadays AI is one of the emerging technologies which has been used in the “Robotics”, the best example being the “Sophia” an interactive social robot who has even granted the state of citizenship of Saudi Arabia[1].

HUMANOID – AN ADVANCED INTERACTIVE SOCIAL ROBOT

Firstly, you must know what a humanoid is. A Humanoid is an application of advanced robotics who are human-like and programmed to replicate human actions in more accurate and efficient manner. As shown in the movie series *The Terminator*, these humanoids are programmed to be exceptional in physical quotient and intelligence quotient. But where they lag behind humans is the emotional quotient.

In the world of Humanoids, “Imaging Technology” is the only way for them to see and analyse the surrounding. As their imaging capabilities get developed, they get to analyse their surrounding better.

WHAT IS THERMOGRAPHY?

The Thermography or Thermal Imaging technology, which has been encouraged by snakes which gives ability to detect the objects w.r.t their temperature. Such technology is being commonly used at the security and military equipment's. It is a type of imaging captured by the thermal sensors and converted to a graphical image format.

Thermal imager like the *FLIRE6 Camera* is used to detect heat anticipation pattern of our body and thus detects injuries and diseases[8]. Any illness in our body creates an abnormal pattern of heat anticipation. The thermal imager can accurately capture those patterns to help experts diagnose the approximate disease.



Fig – A thermal image of the forest at night