Infrared Thermal Camera-Based Real-Time Identification and Tracking of Large Animals to Prevent Animal-Vehicle Collisions (AVCs) On Roadways

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Project Abstract:

Animal vehicle collision (AVC) is constantly a major safety issue for the driving on Roadways. It is estimated that there are over 35,000 AVCs yearly in the US resulting in 3 to 11 deaths, over 400 personal injuries, and close to 4,000 reported property damages of one thousand dollars or more. This justifies many attempts trying to detect large animals on road. However, very little success has been achieved. In order to reduce the number of AVCs, the PI proposes an infrared (IR) thermal imaging method to detect the presence of large animals and to track their locations for drivers to avoid AVCs. The proposed system consists of an infrared thermal image grabbing and processing system and a motion control and tracking system. By analyzing the infrared thermal images, the presence of an animal can be determined and tracked. Since the IR thermal imaging is independent of visible light, the system can work on both day and night, even in bad weather. Depending on the capability of the selected IR thermal cameras, the system has the potential to cover a circle area with up to several kilometers in radius for the identification of an object in size of an adult human being.

Anticipated Duration of Project : 12 months