A COST-EFFECTIVE SOLUTION FOR INTERNET OF THINGS ENABLED ULTRASONIC ANEMOMETER SENSOR DESIGN

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Abstract:
The design of an internet of things enabled ultrasonic anemometer has been presented in this paper for the calculation of wind speed and direction. The proposed design is simple and cost effective due to the chosen components which are extremely cheap. The testbed of proposed solution was deployed at roof of Department of Computer and Information Systems Engineering at NED University over week duration. The results have been compared with mechanical wind speed sensor deployed at top of Department of Industrial and Manufacturing at NED University. Calibration of ultrasonic anemometer has also been carried out by exploiting simple machine learning techniques. Although the response time of two sensors are quite different however just for illustration and a better insight results obtained from two sensors has been compared, after applying machine learning on designed ultrasonic anemometer. The results obtained are satisfactory since the slope produced by two sensors is almost following the same path with certain bias.

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