

The Impact of Artificial Intelligence on Quality Control and Quality

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Abstract : Many companies use the statistical tool named as statistical quality control, and which can have a high cost for the companies interested on these statistical tools. The evaluation of the quality of products and services is an important topic, but the reduction of the cost of the implantation of the statistical quality control also has important benefits for the companies. For this reason, it is important to implement a economic design for the various steps included into the statistical quality control. In this paper, we describe some relevant aspects related to the economic design of a quality control chart for the proportion of defective items. They are very important because the suggested issues can reduce the cost of implementing a quality control chart for the proportion of defective items. Note that the main purpose of this chart is to evaluate and control the proportion of defective items of a production process.

Keywords : model predictive control, hierarchical control structure, genetic algorithm, water quality with DBPs objectives proportion, type I error, economic plan, distribution function bootstrap control limit, p-value method, out-of-control signals, p-value, quality characteristics

Conference Title : ICCAR 2024 : International Conference on Control, Automation and Robotics

Conference Location : New York, United States

Conference Dates : July 11-12, 2024