

ABSTRACT

This research sheds light on angular velocity within manufacturing processes, emphasizing the critical role of precise monitoring. The study successfully measured angular velocities using a proposed system. Further analysis involved material variations, revealing distinct patterns over a 3.1-second interval. To address challenges related to data collection, transmission, and storage in monitoring processes, the study implemented Compressive Sensing (CS) techniques. These techniques encompassed diverse transformations and matrix types to enhance signal reconstruction while mitigating data-related issues. The findings underscore CS's potential in overcoming these challenges, showcasing its utility in ensuring data accuracy and reliability. This research contributes not only to understanding angular velocity's dynamics in manufacturing but also to improving monitoring methodologies through innovative solutions that address data-related concerns.

Keywords: monitoring manufacturing process, Compressive Sensing, Fast-Classification via data compression.