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Remote Video Analysis for Real-time Crack Detection

Vision software delivers precise crack contours at high speed and low false-alarm rates for automated inspection.

Equipment inspections are necessary for quality control and maintenance to keep equipment running safely. However, current inspection methods can involve time-consuming and costly methods where a human inspector must accurately and quickly identify defects on a surface. Researchers at Purdue University have developed a defect detection approach to inspect the internal components faster and more accurately than current industrial and other state-of-the art practices. This approach provides precise crack contours that are useful in assessing the severity of cracks while achieving 98.5% hit rates against 0.1 false positives per frame. Furthermore, this approach is 110 to 150 times faster when compared to other state-of-the art approaches. This new approach is a significant step toward real-time video analysis for autonomous defect detection.

Advantages:

- Accurate

- Fast

Potential Applications:

- Video Analysis for Defect Detection

TRL: 3

Intellectual Property:

Provisional-Patent, 2019-04-09, United States

PCT-Patent, 2020-04-09, WO

NATL-Patent, 2021-10-08, United States

Technology ID

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Category

Artificial Intelligence & Machine Learning/AI-Integrated Imaging Systems & Industrial Vision and Inspection

Further information

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NATL-Patent, 2021-10-08, Canada

NATL-Patent, 2021-10-08, Europe

NATL-Patent, 2021-10-10, Australia

CON-Patent, 2024-07-12, United States

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