CHMI-24-03: Heterogeneous Data Fusion for Non-Destructive Inspection (NDI) for Crack Depth Estimation and Kissing Bonds Detection

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This project focuses on advancing non-destructive inspection (NDI) techniques for composite structures, particularly for detecting subtle defects like crack depth and kissing bonds, critical for safety in applications. Traditional NDI methods often fall short in detecting these issues on-site and in real time. The CHMI team is developing a novel approach that integrates multiple inspection methods with machine learning-based anomaly detection and data fusion. The goal is to create a more accurate, efficient, and less intrusive way to evaluate structural integrity, ultimately enhancing reliability and reducing maintenance costs in composite-based systems.