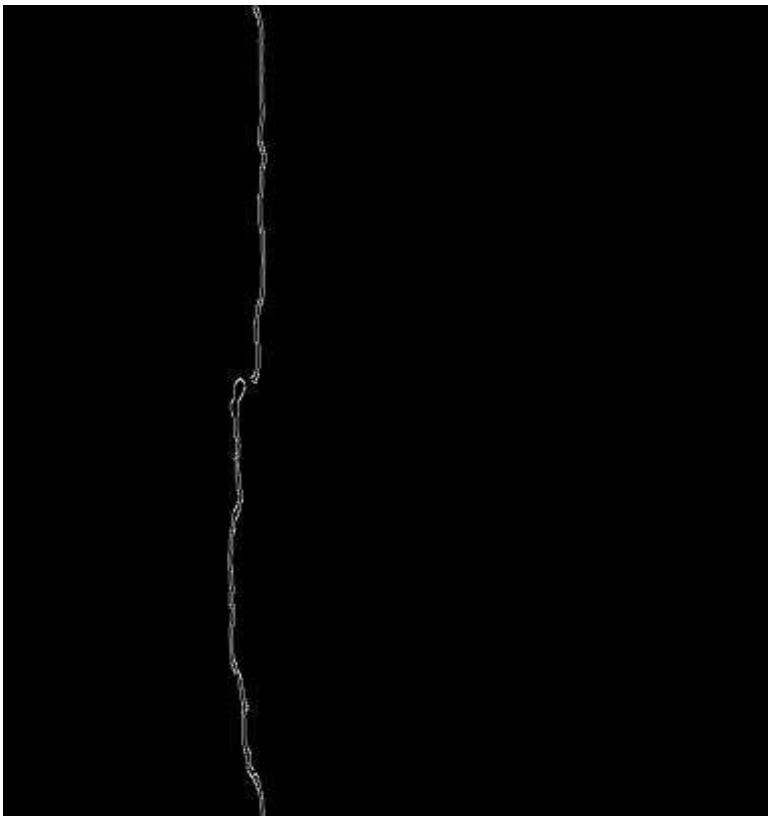
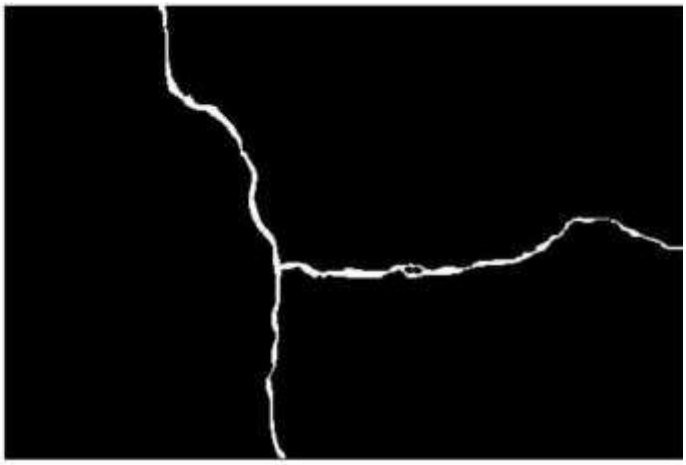
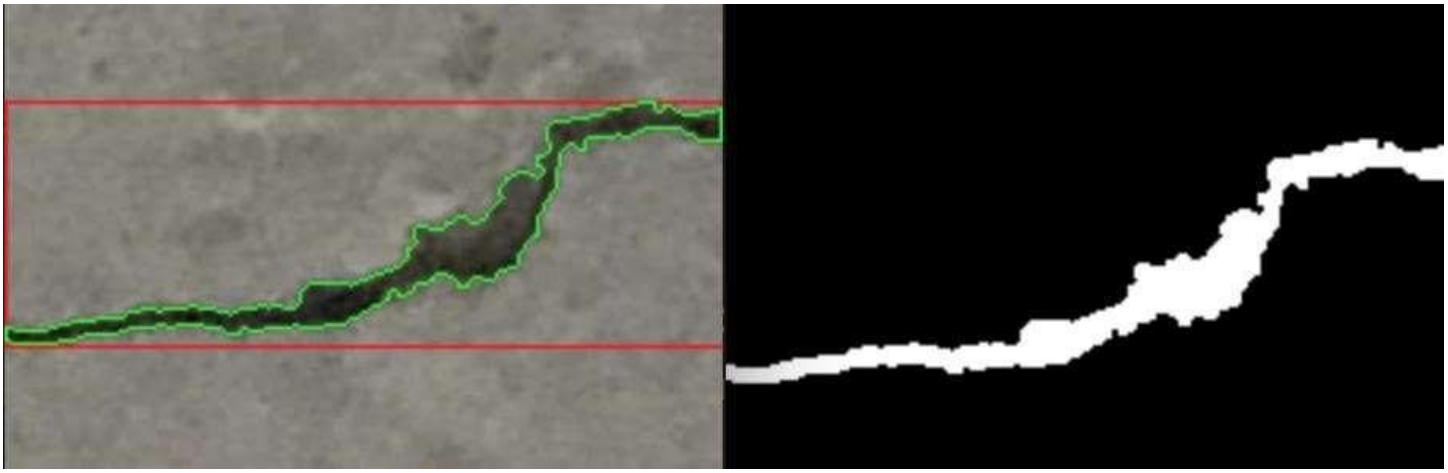
-RESULTS AND ANALYSIS

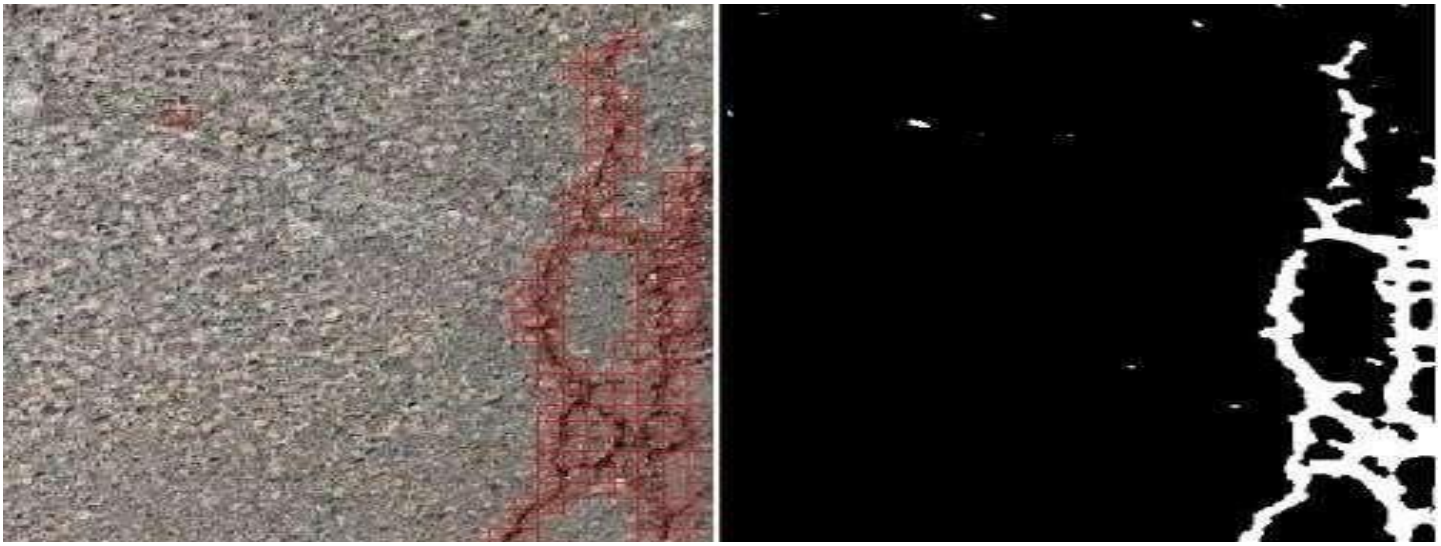
The implementation of drone technology for detecting structural cracks has demonstrated significant improvements in inspection efficiency, accuracy, and safety. Field tests and real-world applications have shown that drones equipped with high-resolution cameras, thermal sensors, and LiDAR systems can effectively identify and document both surface-level and subsurface cracks. The use of advanced machine learning algorithms has further enhanced the precision of crack detection, reducing the incidence of false positives and negatives. Drones have proven particularly advantageous in inspecting hard-to-reach or hazardous areas, eliminating the need for manual inspections that pose safety risks. The ability to process and analyze data in real-time has enabled immediate assessment and reporting, facilitating timely maintenance decisions. Overall, the integration of drone technology in structural health monitoring has resulted in more comprehensive and reliable inspections, with substantial time and cost savings compared to traditional methods. This analysis underscores the potential of drones to revolutionize the maintenance and safety protocols of critical infrastructure.

Crack detection in Thermal analysis

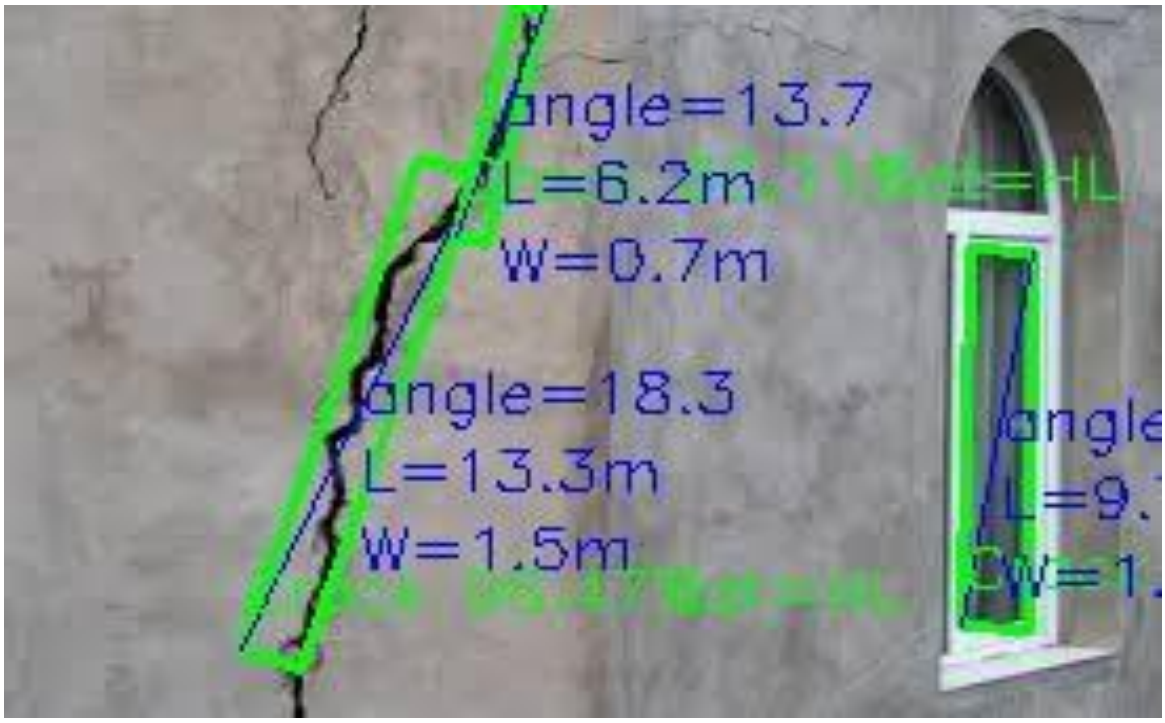


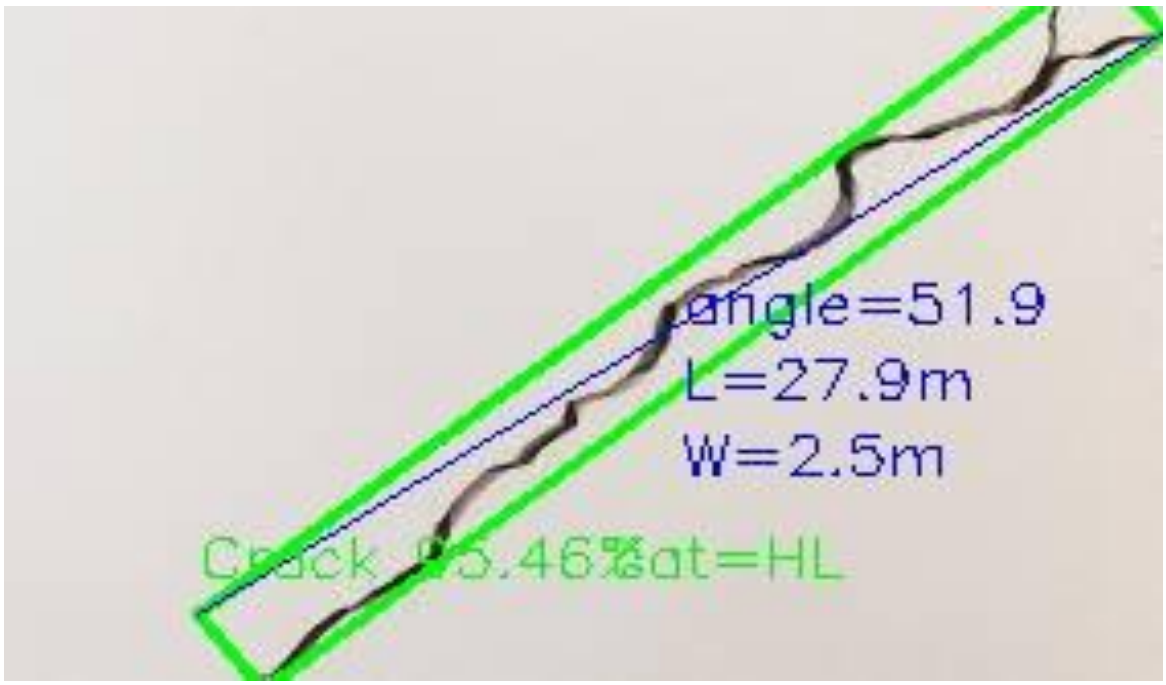


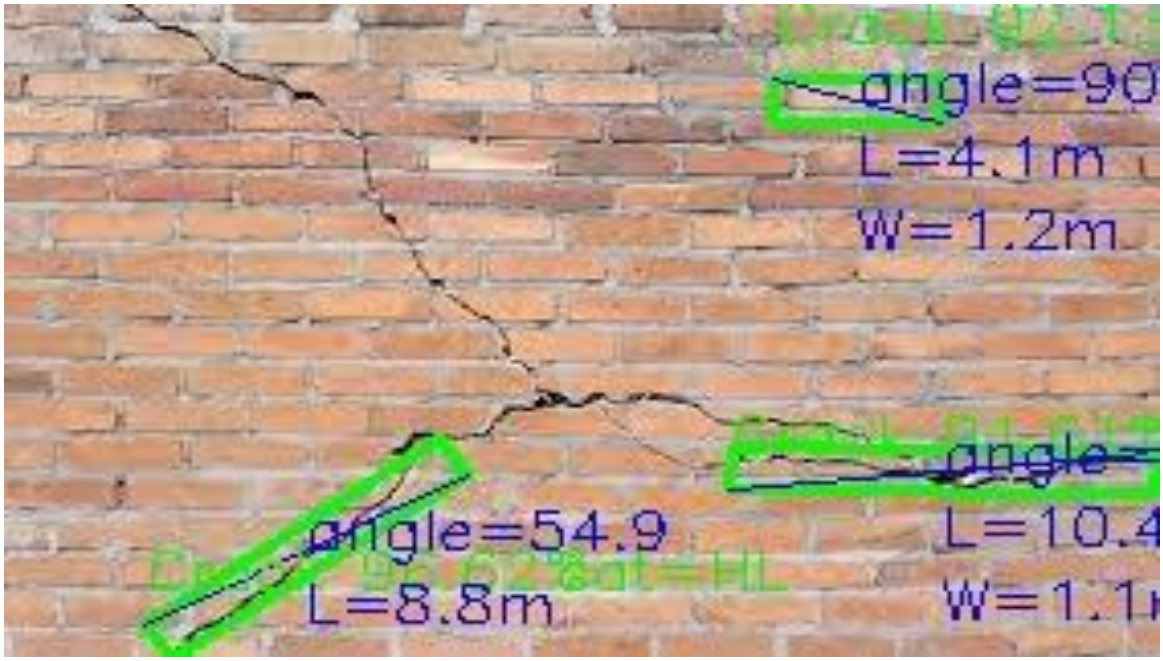




Crack detection and dimensional analysis



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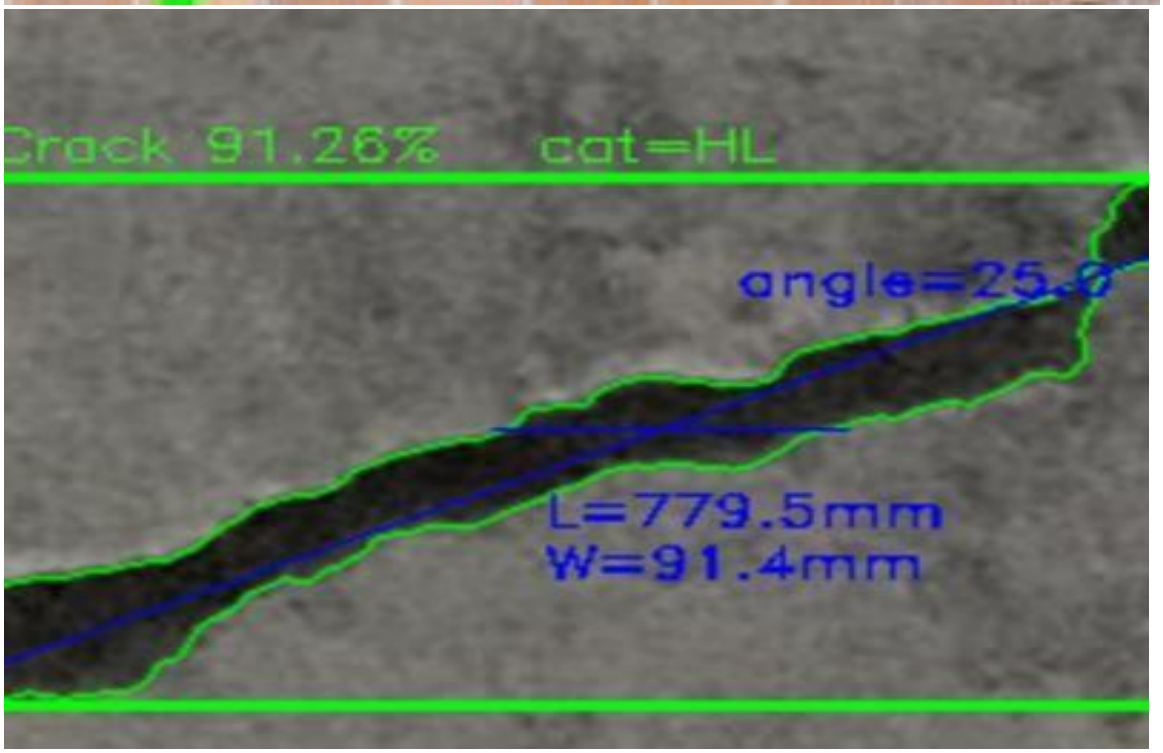
L=8.8m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