



<b>UTC Project Information</b>	
Project Title	DEVELOPMENT OF METHODS FOR RAPIDLY AND ACCURATELY PROCESSING LIDAR DATA FOR EVALUATING DEFORMATIONS IN BRIDGES AND BRIDGE ELEMENTS.
University	University of Washington
Principal Investigator	Richard Wiebe.
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Funding Source(s) and Amounts Provided (by each agency or organization)	IBT-ABC-UTC funds : \$50,000 Match funds : \$50,000
Total Project Cost	\$ 100,000
Agency ID or Contract Number	69A3552348322
Start and End Dates	January 1, 2025 - Active
Brief Description of Research Project	<p>Light Detection And Ranging (LiDAR) is a remote sensing method that creates point-clouds defining physical configuration of objects within line of sight by measuring travel time of pulsed lasers. It promises to revolutionize structural testing and health monitoring by allowing for the replacement of a legion of point measurement devices with a single device that provides exceptionally accurate and synchronized data to accurately describe external structural features. The point clouds that are generated are useful in both qualitative visualization and quantitative analysis of structural state and changes. LiDAR produces very large data sets which are typically well-suited to assessment with data science methods. These methods include both classical curve/surface fitting methods, and modern ML-based approaches. However, there must be engineers “in the loop” at the development stage to ensure that models produce engineering quantities of interest. For example, models that automatically identify beam and girder elements, and generate plots of deformation, slope, curvature, or changes in these quantities over time. The proposed work seeks to provide a bridge from the raw data to engineering insights with easy-to-use software tools.</p>

<p>Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here</p>	<p>The outcomes will be tracked and reported once they are identified.</p>
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<p>The impacts will be tracked and reported once they are identified.</p>
<p>Web Links</p> <ul style="list-style-type: none"><li>• Reports</li><li>• Project website</li></ul>	<p><a href="https://abc-utc.fiu.edu/development-of-methods-for-rapidly-and-accurately-processing-lidar-data-for-evaluating-deformations-in-bridges-and-bridge-elements/">https://abc-utc.fiu.edu/development-of-methods-for-rapidly-and-accurately-processing-lidar-data-for-evaluating-deformations-in-bridges-and-bridge-elements/</a></p>