

UTC Project Information	
Project Title	Developing a Portable Data Acquisition System to Study Road User Behavior
University	University of Alaska
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Funding Source(s) and Amounts Provided (by each agency or organization)	University of Washington PacTrans \$ 50,000 University of Alaska \$ 50,000
Total Project Cost	\$100,000
Agency ID or Contract Number	69A3551747110
Start and End Dates	September 16, 2020-September 15, 2022
Brief Description of Research Project	<p>One major issue with the LiDAR data is that, unlike GPS data, the point clouds do not have any unique identity. This means that even after detecting objects across various time frames, one cannot track them across various frames. While there are a few options available to track objects, the most appropriate process needs to be identified.</p> <p>The PIs will identify the most efficient methods to detect and track objects. This will be one of the major outcomes of the project. Once software programs are available to detect and track objects, the PDAQS can be used to study the complex behavior of road users, which were not possible with the traditional data.</p>
Describe Implementation of Research Outcomes (or why not implemented)	<p>We have developed the Portable Data Acquisition System (PDAQ). On the software side, we developed a modularized framework capable of efficiently processing LiDAR and video data and detecting objects in 2-D and 3-D. Our main results are an alignment tool that adjusts, and tests point transformation parameters, LiDAR/camera timing synchronization in real time, and the integration of point cloud detection into our framework. However, we need to carry out more research to capture and track objects using the system.</p>
Place Any Photos Here	

Impacts/Benefits of Implementation (actual, or anticipated)	Once the system is developed, the tools can be used to detect and track objects around the PDAQS. These tools can be used to various applications including assessing road user behavior near-real time.
Web Links <ul style="list-style-type: none">• Reports• Project Website	