

<b>UTC Project Information</b>	
Project Title	<b>Development of a Brake Diagnostic System for Air Brakes in Autonomous and Connected Trucks</b>
University	Texas A&M University
Principal Investigator	Swaroop Darbha
PI Contact Information	E-mail: <a href="mailto:dswaroop@tamu.edu">dswaroop@tamu.edu</a> , swaroop.darbha@gmail.com Phone: 979-862-2238, 979-204-2425 (cell)
Funding Source(s) and Amounts Provided (by each agency or organization)	Non-Federal: Mechanical Engineering, TAMU: \$20000 Non-Federal: In-kind support (TA support for one year): \$50,000
Total Project Cost	\$340,000
Agency ID or Contract Number	Grant No: 69A3551747115 Project: 04-100
Start and End Dates	01/05/2019-08/31/2021
Brief Description of Research Project	This project aims to develop and experimentally corroborate diagnostic algorithms for air brakes in autonomous and connected trucks; this task is accomplished via (1) mathematical modeling of air brakes, (2) developing a test setup for air brakes, (3) developing and implementing leak detection and pushrod stroke estimation algorithms.
Describe Implementation of Research Outcomes (or why not implemented)  Place Any Photos Here	<ol style="list-style-type: none"> <li>1) Construction of an experimental setup for air brakes.</li> <li>2) Mathematical model and its experimental corroboration for air brakes.</li> <li>3) Development and experimental corroboration of mass rate of leakage of air in the brakes.</li> <li>4) Development and experimental corroboration of pushrod stroke estimation algorithms for air brakes.</li> <li>5) Research Publications, Masters Theses and Doctoral dissertations.</li> <li>6) Pedagogical material for Automotive Engineering class and other classes in the area of transportation.</li> </ol>
Impacts/Benefits of Implementation (actual, not anticipated)	Enhanced transportation safety via preventive maintenance and on-board monitoring of brakes in autonomous and connected trucks.
Web Links <ul style="list-style-type: none"> <li>• Reports</li> <li>• Project website</li> </ul>	<a href="https://www.vtti.vt.edu/utc/safe-d/index.php/projects/development-of-a-diagnostic-system-for-air-brakes-in-autonomous-and-connected-trucks/">https://www.vtti.vt.edu/utc/safe-d/index.php/projects/development-of-a-diagnostic-system-for-air-brakes-in-autonomous-and-connected-trucks/</a>