



UTC Project Information	
Project Title	INTELLIBRIDGE:ai-POWERED PRECISION IN BRIDGE MAINTENANCE OPTIMIZATION
University	Florida A&M University
Principal Investigator	Qianwen (Vivian) Guo
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Funding Source(s) and Amounts Provided (by each agency or organization)	IBT-ABC-UTC funds : \$43,500 Match funds: \$43,500
Total Project Cost	\$ 87,000
Agency ID or Contract Number	69A3552348322
Start and End Dates	January 1.2025 - Active
Brief Description of Research Project	<p>Bridges perform the most important roles as part of transportation networks, growing opportunities for interconnection and economic development. Yet, due to limited budgets and the difficulties associated with determining how structures will decay over time, keeping these essential structures in tip-top shape poses significant challenges. These conventional maintenance strategies involve periodic inspection and query-based scheduling, which results in a lack of precision that can lead to delays, poor resource allocation, and wasted time. To overcome these issues, this project will develop an intelligent system called IntelliBridge to transform the way to plan bridge maintenance. The proposed system makes use of advanced machine learning (ML) algorithms that predict the future state of bridge elements, perform cost analysis and give the best maintenance interventions that are under budget, and identify any inefficiencies in the existing strategies. Utilizing historical data from the National Bridge Inventory (NBI) and National Bridge Elements (NBE), IntelliBridge will enable actionable insights that support data-driven decision-making to deliver concerted maintenance interventions that are cost-effective, timely, and performance-driven. Implementing this AI-based solution will provide transport agencies with an effective and strategic mechanism to increase bridges' life, safety, and efficiency.</p>

Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	The outcomes will be tracked and reported once they are identified.
Impacts/Benefits of Implementation (actual, not anticipated)	The impacts will be tracked and reported once they are identified.
Web Links <ul style="list-style-type: none">• Reports• Project website	https://abc-utc.fiu.edu/intellibrigeai-powered-precision-in-bridge-maintenance-optimization/