



UTC Project Information	
Project Title	Optimizing Strategies in Bridge Asset Management Through GENERATING Interactive Reinforcement Learning (GI-RL) METHODS
University	The University of Georgia Research Foundation (UGARF)
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Funding Source(s) and Amounts Provided (by each agency or organization)	IBT-ABC-UTC funds : \$34,500 Match funds : \$34,500
Total Project Cost	\$ 69,000
Agency ID or Contract Number	69A3552348322
Start and End Dates	January 1, 2025 - Active
Brief Description of Research Project	<p>The proposed study aims to create a Generating Interactive Reinforcement Learning (GI-RL) framework to optimize bridge maintenance strategies. Bridge asset management is a critical aspect of infrastructure maintenance, particularly for bridge owners responsible for ensuring the safety and functionality of numerous bridges. Traditional methods often involve reactive maintenance strategies, which can lead to suboptimal outcomes.</p> <p>This study proposes exploring the application of reinforcement learning (RL) to optimize bridge management strategies, focusing on strategic decision-making under imperfect information. RL is a subfield of artificial intelligence (AI) that focuses on training agents or stakeholders to make sequences of decisions. It rewards bridge owners for making beneficial choices, such as performing preventive maintenance and/or reducing user/driver time, thereby promoting Accelerated Bridge Construction (ABC).</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/optimizing-strategies-in-bridge-asset-management-through-generating-interactive-reinforcement-learning-gi-rl-methods/