

# ASCE Global Innovate Robotics and Automation Challenge for Smart Infrastructure

## Objective Statement

To foster the development of innovative computing, robotics, and automation solutions that address the pressing challenges of civil and construction engineering. This competition aims to promote sustainable and resilient, and smart infrastructure development and maintenance, propelling the field towards a more efficient and technologically advanced future.



## Competition Challenges

Participants will choose a challenge within the scope of civil engineering and construction that emphasizes sustainable and resilient development, planning, construction, and maintenance of smart infrastructure, or both. Example challenges include:

- Designing an autonomous robotic system for inspecting and maintaining bridges.
- Developing a machine learning model to optimize traffic flow in real-time for smart cities.
- Creating a drone-based system for 3D mapping and assessment of construction sites for environmental impact.
- Developing an AI-Driven pedagogical tool for workforce skills development

**Track 1** University and college students from related fields across the world.

**Track 2** Startups and independent innovators focusing on civil engineering technologies across the world.

## Awards

- First Place: \$500
- Second Place: \$300
- Third Place: \$200

# ASCE Global Innovate Robotics and Automation Challenge for Smart Infrastructure

## Application

A maximum two-page project proposal outlining the problem, proposed solution, technology stack, and impact on civil engineering. Send your application to [ASCEGlobalcommittee@gmail.com](mailto:ASCEGlobalcommittee@gmail.com), [hjebelli@illinois.edu](mailto:hjebelli@illinois.edu)

## Final Submission Requirements

A three-page report and a video presentation (max 10 minutes) to explain the project, and to showcase a working prototype or simulation that demonstrates the solution's feasibility

## Timeline

- Launch Date: October 1st, 2024
- Registration and Submission of the Application: December 15, 2024
- Decisions and Invitations to Proceed with Full Submission: January 15, 2024
- Final Submission Deadline: March 31, 2025
- Judging Period: April 01 to April 30, 2025
- Awards Ceremony: Event to announce and celebrate the winners.



## Judging Criteria

- Innovation and Creativity (30%): Originality of the solution and its approach to solving a civil engineering challenge.
- Impact and Relevance (30%): Potential to contribute to sustainable, smart infrastructure development and maintenance.
- Technical Execution (20%): Effectiveness, efficiency, and practicality of computing, robotics, and automation integration.
- Feasibility and Scalability (10%): Potential for real-world application and scalability.
- Presentation (10%): Clarity, persuasiveness, and quality of the video presentation.