NRI: INT: Collaborative Research: Buoyancy-assisted Collaborative Robots That are Cheap, Safe, and Never Fall Down.

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Challenge

Develop novel robots that are safely deployable to human daily environments.

Solution

Introduce a fundamentally new family of legged robots, namely buoyancy assisted robots (BARs).

empower BARs with reliable locomotion and collaboration skills using deep reinforcement learning.

Buoyancy-assistive Robots (BARs):

BALLU (top) and BLAIR (bottom)

Scientific Impact

Design of new cheap and safe robots.

Control of low-fidelity, high-sensitive system.

Broader Impact

Human indoor interactions w/ cameras/microphones/projectors.

Disaster zone / outdoor monitoring with thousands of robots.

Low-cost and safe platform for STEM education.

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