Leveraging Elastic Instability for High Performance Soft Robots

Collaborative Research: Adaptive, Rapid, and Multifunctional Soft Robots (ARM SoRo) with Reconfigurable Shapes and Motions Enabled by Tunable Elastic Instabilities

Award #: CMMI 2126039 & 2126072,
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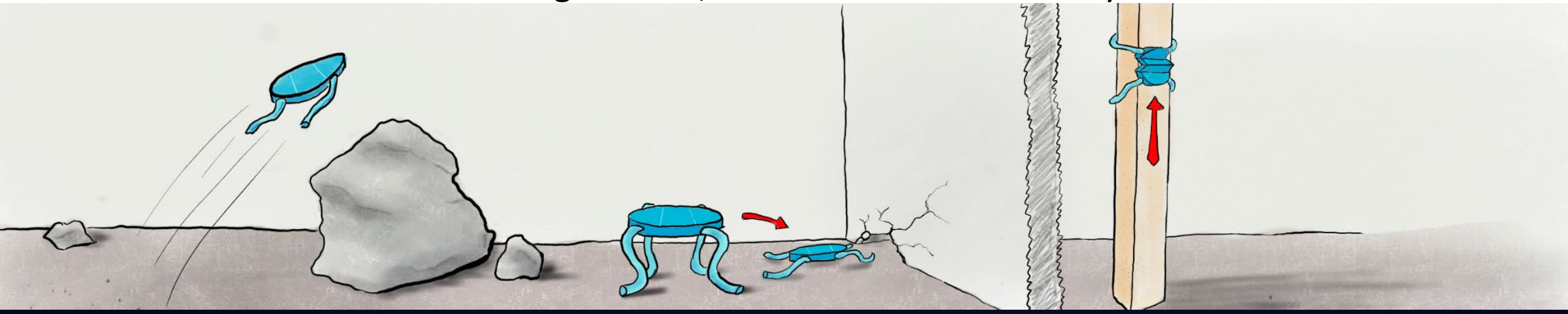
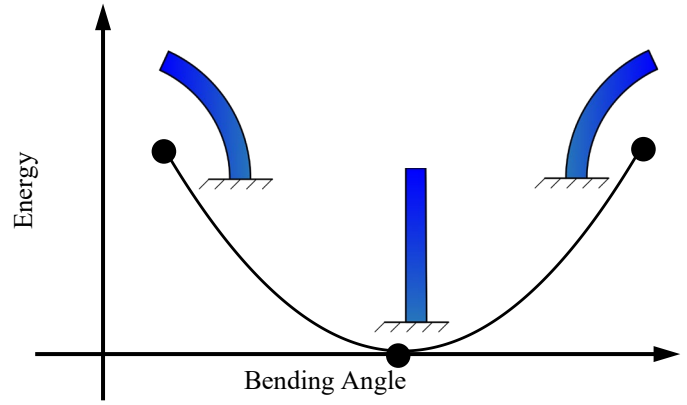


Leveraging Elastic Instability for High Performance Soft Robots

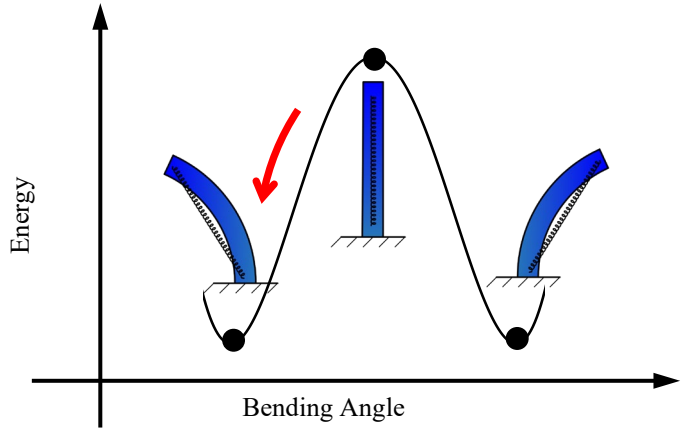
Challenge

- Slow speed for soft robots
- Limited customizability



Solution

- Elastic instabilities (e.g., bistability)
- Tunable elastic instabilities



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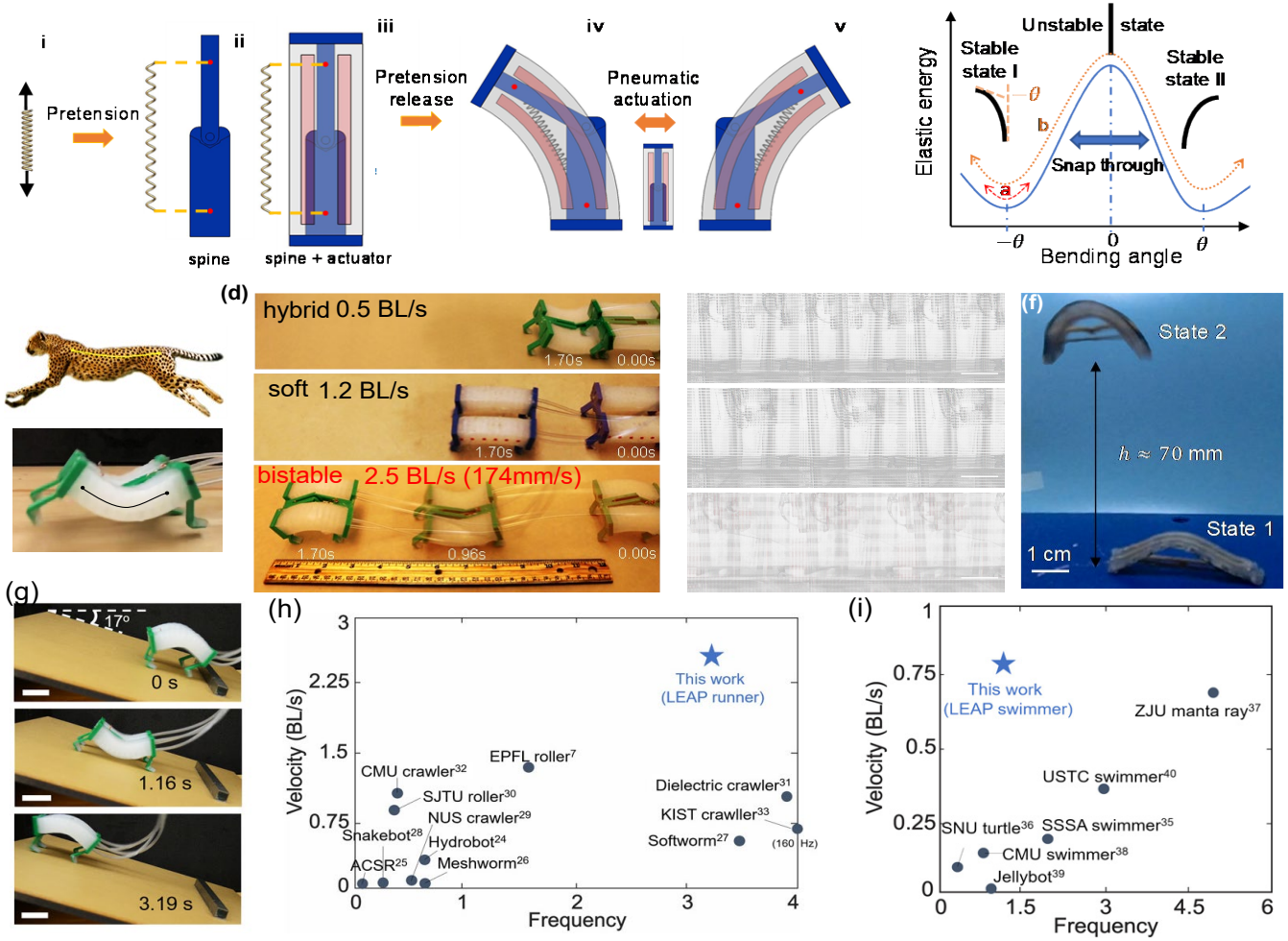

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Scientific Impact

- Open-source hardware
- Open-source software

Broader Impact

- Outreach to K12 students
- Promote undergraduate research
- Incorporate research into courses