

# Robot Learning, Perception & Planning

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## State-of-the-art Computational Robotics Lab

(co-managed with Dr. Abdeslam Boularias and Dr. Jingjin Yu)



Located at 1 Spring street in downtown New Brunswick

## Interdisciplinary work in Robotics

SOCRATES program affiliated with RAD



Socially Cognizant Robotics for a  
Technology Enhanced Society

NSF-funded National Research Traineeship (NRT) in Robotics @ Rutgers

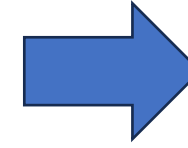
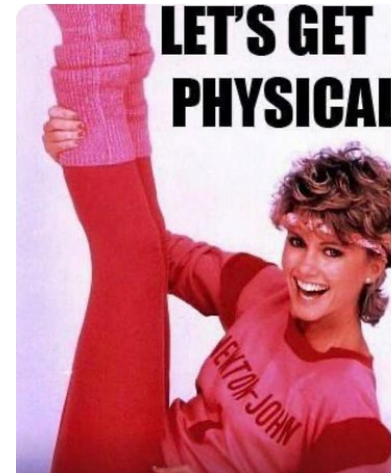
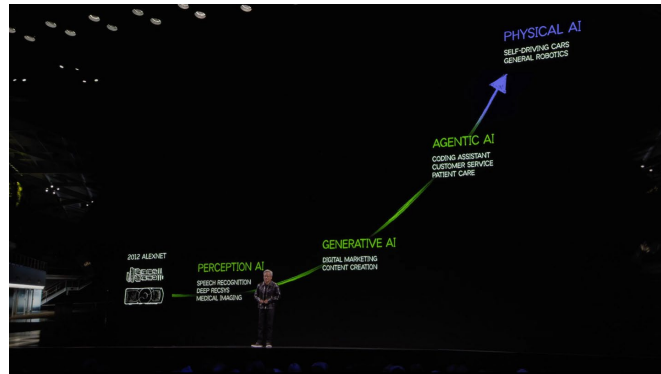
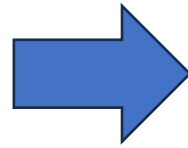
<https://robotics.rutgers.edu/>

# AI is getting Physical!

## Applications of interest

- Manufacturing (Assembly)
- Logistics (Warehouses)
- Automation of Science Experiments
- Space and Extreme Environment Exploration
- Agriculture (Planting & Harvesting)
- Healthcare (Surgery & Rehabilitation)
- Search & Rescue

## Physics-aware Reasoning



## Decision making in the Physical World

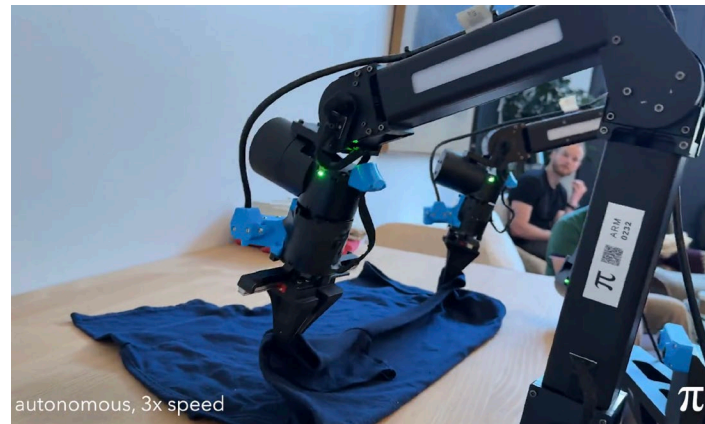
### Physical AI

The Next Big Breakthrough,  
Led by These Startups

Physical AI refers to the development of AI models that learn directly from sensor data to understand and predict complex behaviors in the physical world. These models, known as Large Behavior Models (LBMs), enable a deeper comprehension of environmental patterns, aiming to enhance human understanding of real-world dynamics.



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Great progress in robotics via imitation learning

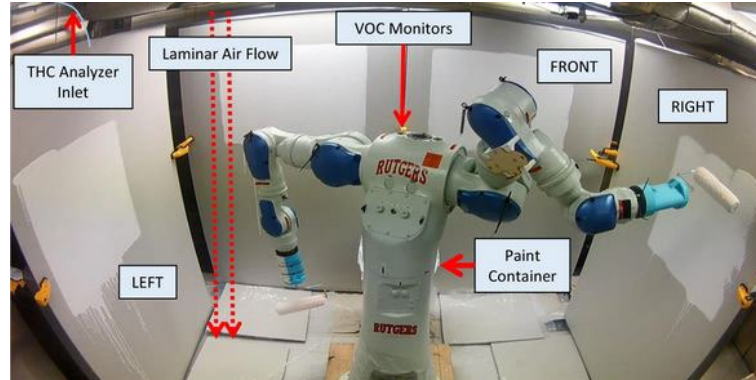


In parallel to ML progress, there is great progress in soft robots

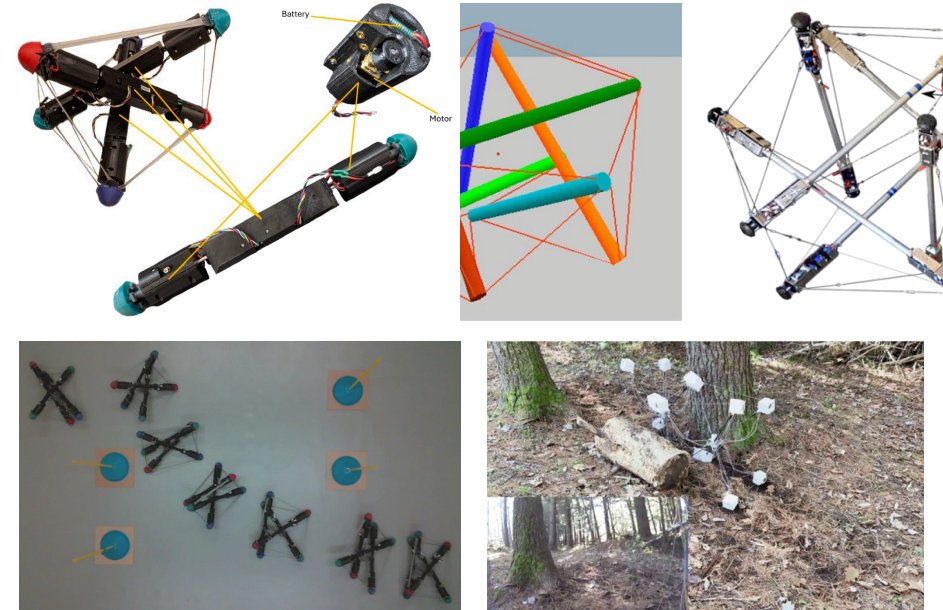
## Manipulating Objects



## Robotics for Scientific Studies



## Soft Field Robots



## Safe Physical AI



## Vehicular Navigation and Legged Locomotion

