UGent AMARSi progress

Ken Caluwaerts, Jonas Degrave, Tim Waegeman, Francis wyffels and Benjamin Schrauwen
Reservoir Lab, Ghent University, Belgium

## MACOP: Modular Architectures with Control Primitives

MACOP is an unsupervised method to control a complex dynamical system by decomposing the complexity into several simple controllers. The final control signal is a linear combination of the motor commands of all controllers.

demonstration trajectory — after pre-training simulator — after training robot
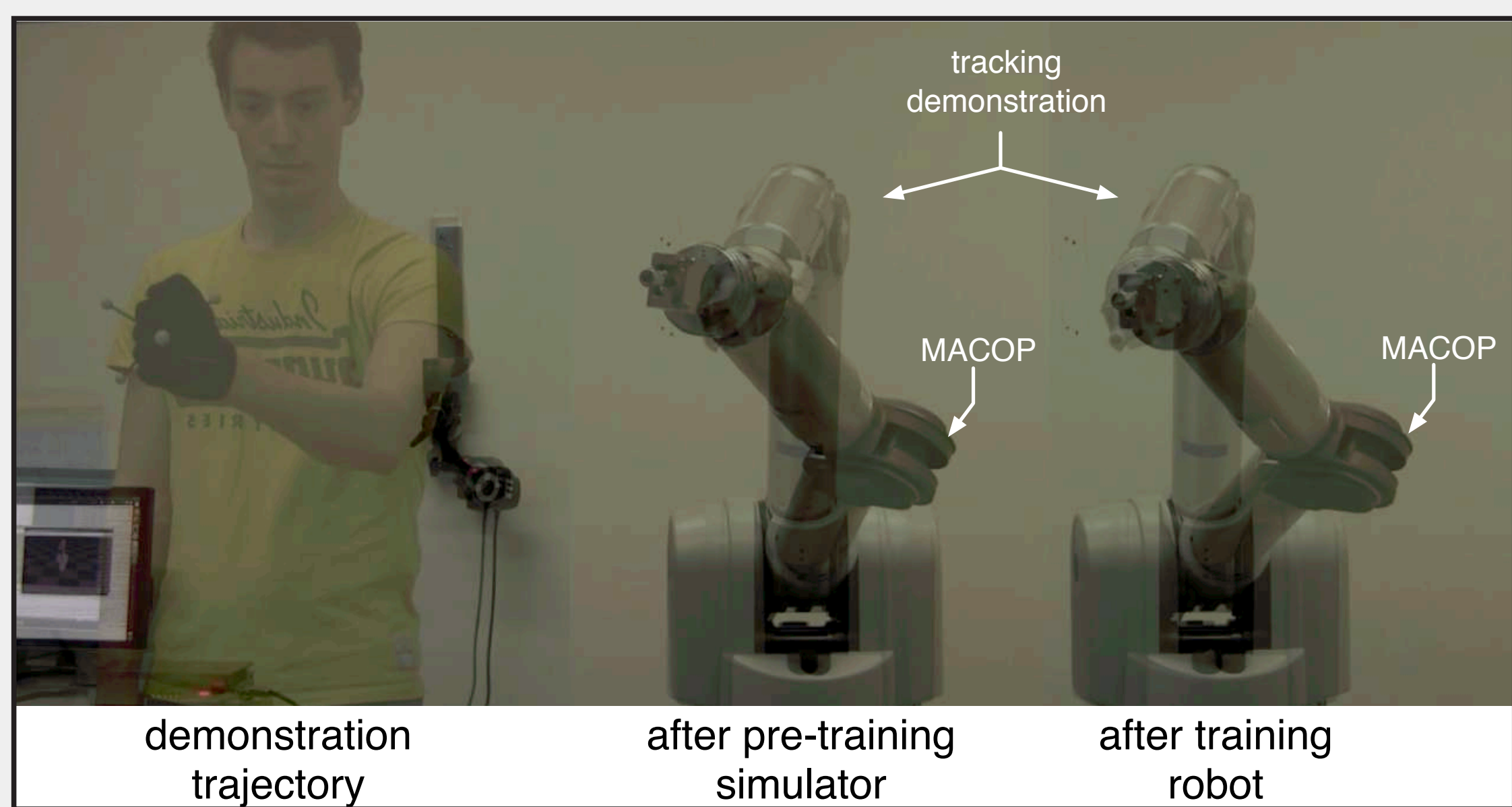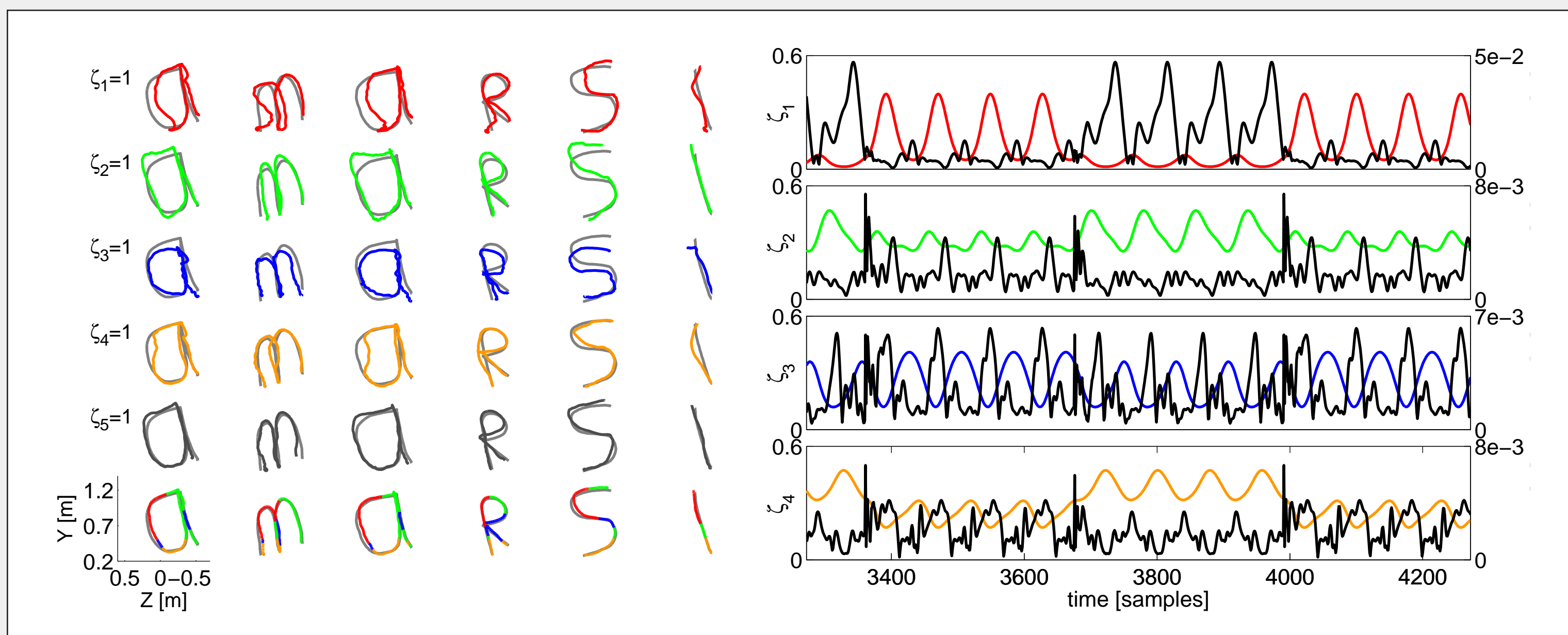
Tensegrity robot design & control
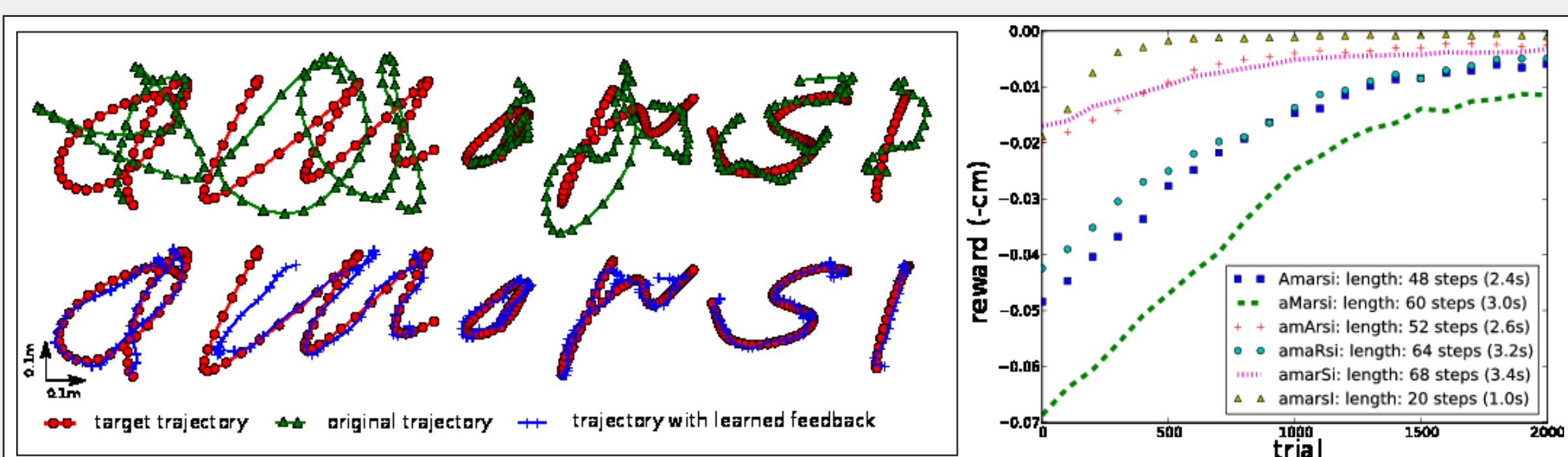
Learning to write with a Tensegrity end-effector using Reward Modulated Hebbian Learning
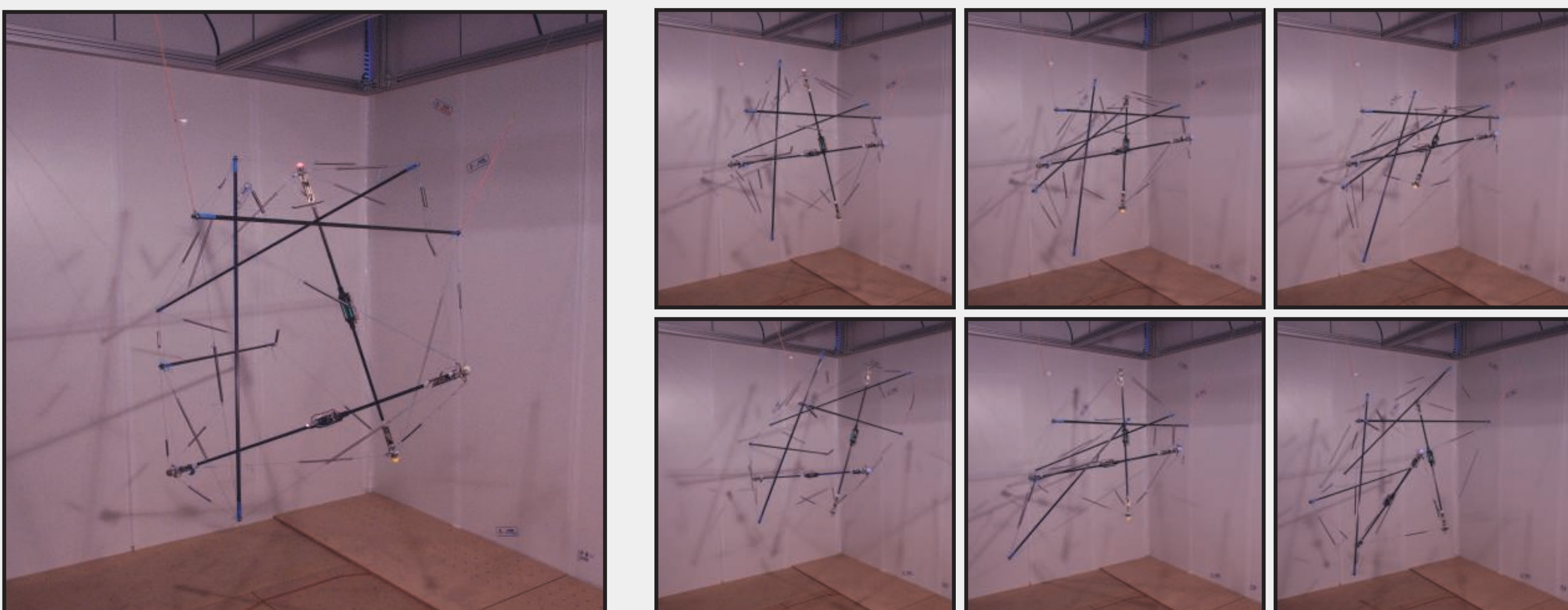
Tensegrity robot configurations with 4 actuators

Oncilla quadruped

The Oncilla is a compliant quadruped robot used to develop rich motor skills for robust locomotion. We have been exploring various gaits for this robot on the simulation model and have started optimizing these gaits on the oncilla robot using particle swarm optimization.
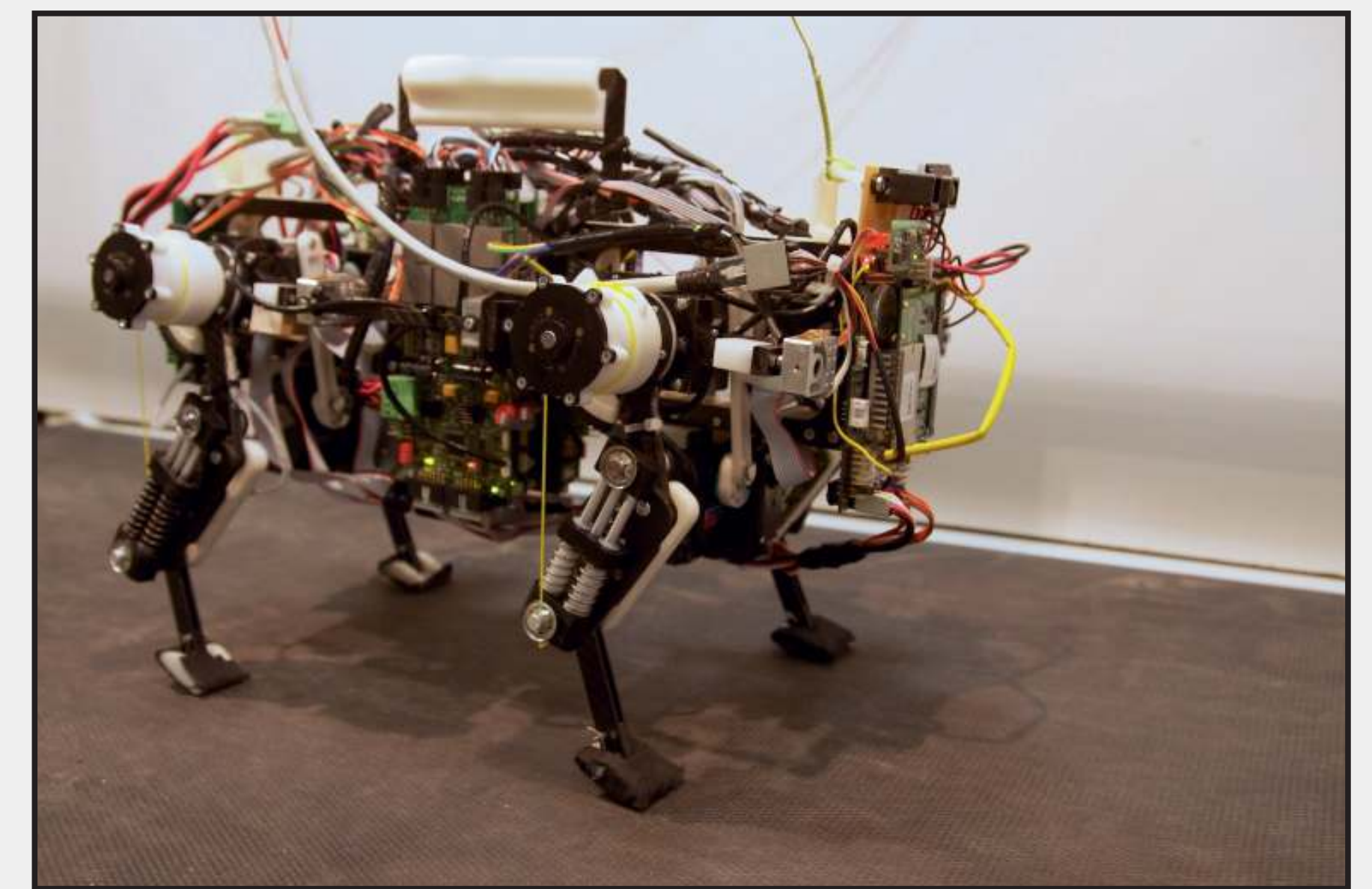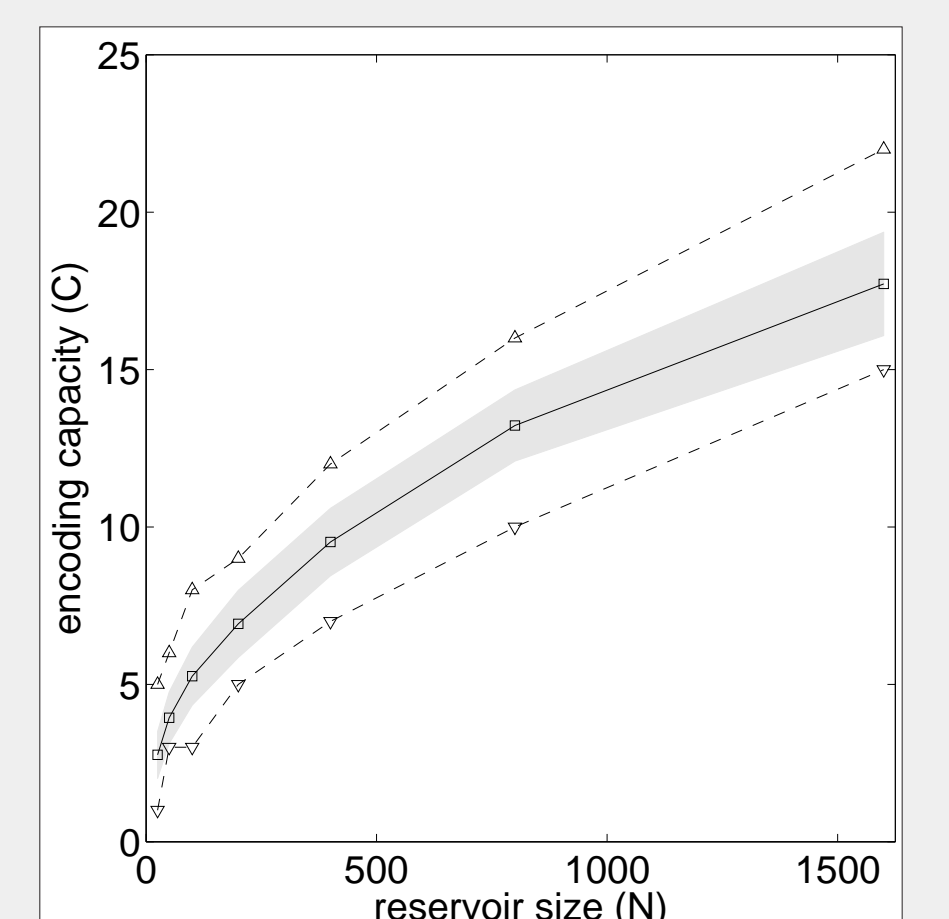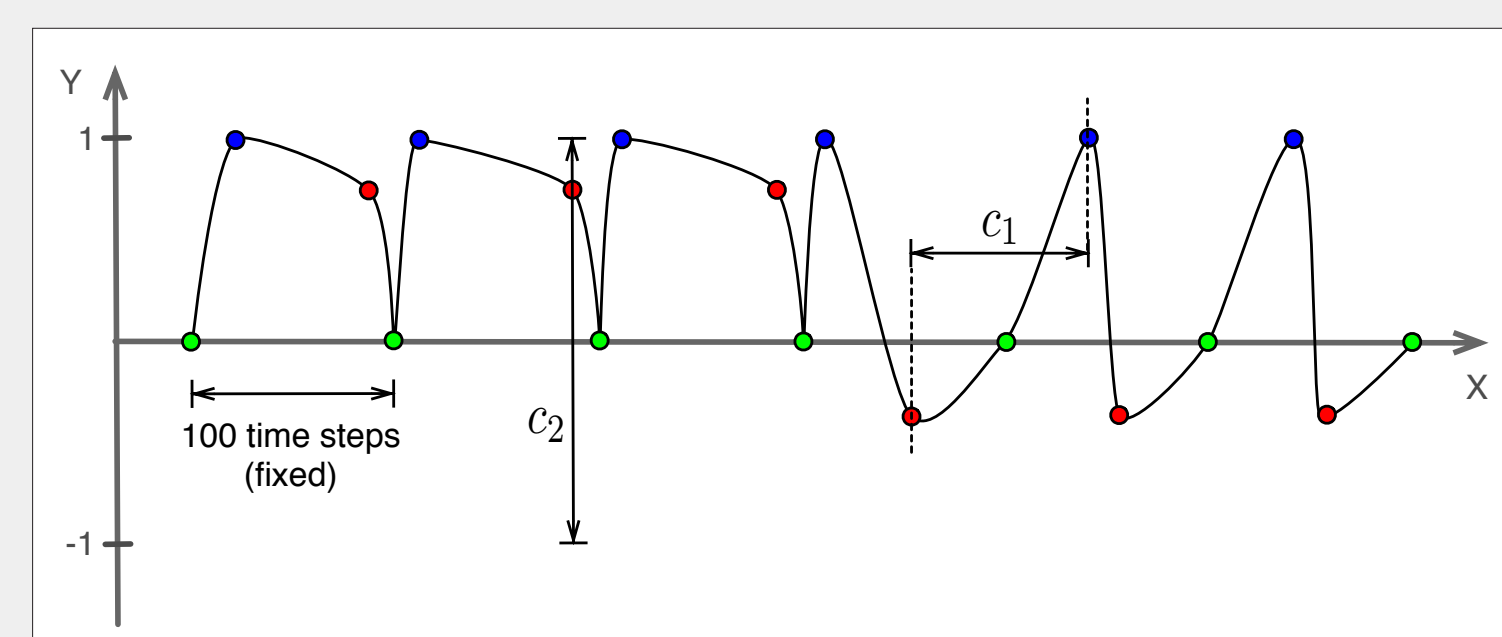

Learning tunable pattern generators

The rich non-linear dynamics of Echo State Networks are perfectly suited for encoding motor patterns of arbitrary shape.
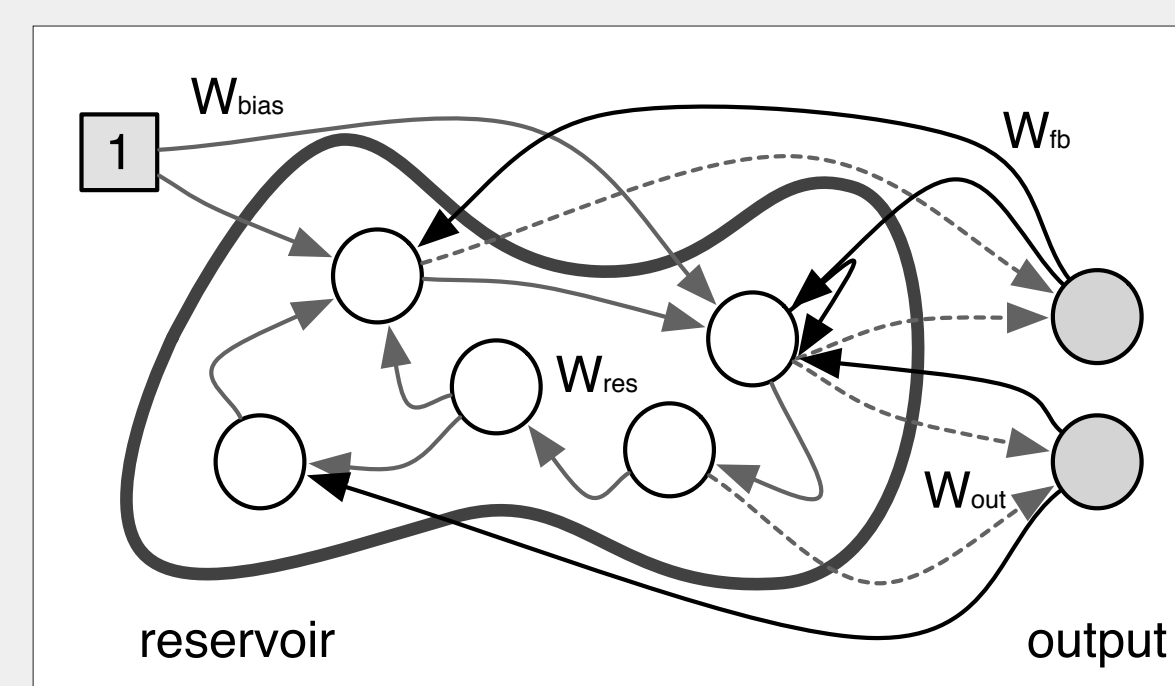
ESN schematic

The number of encodable patterns as a function of the network size

Arbitrary shape modulations

Output of an input driven ESN pattern generator

AMARSi — Adaptive Modular Architectures for Rich Motor Skills

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