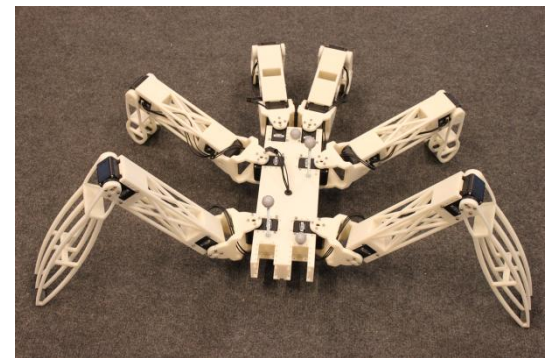
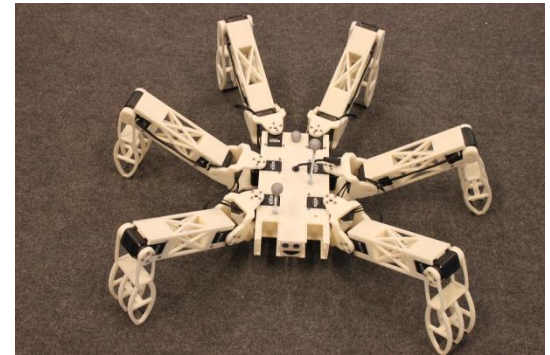
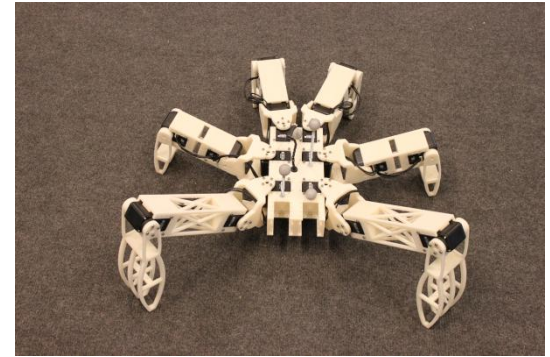


Overcoming Initial Convergence in Multi-Objective Evolution of Robot Control and Morphology Using a Two- Phase Approach

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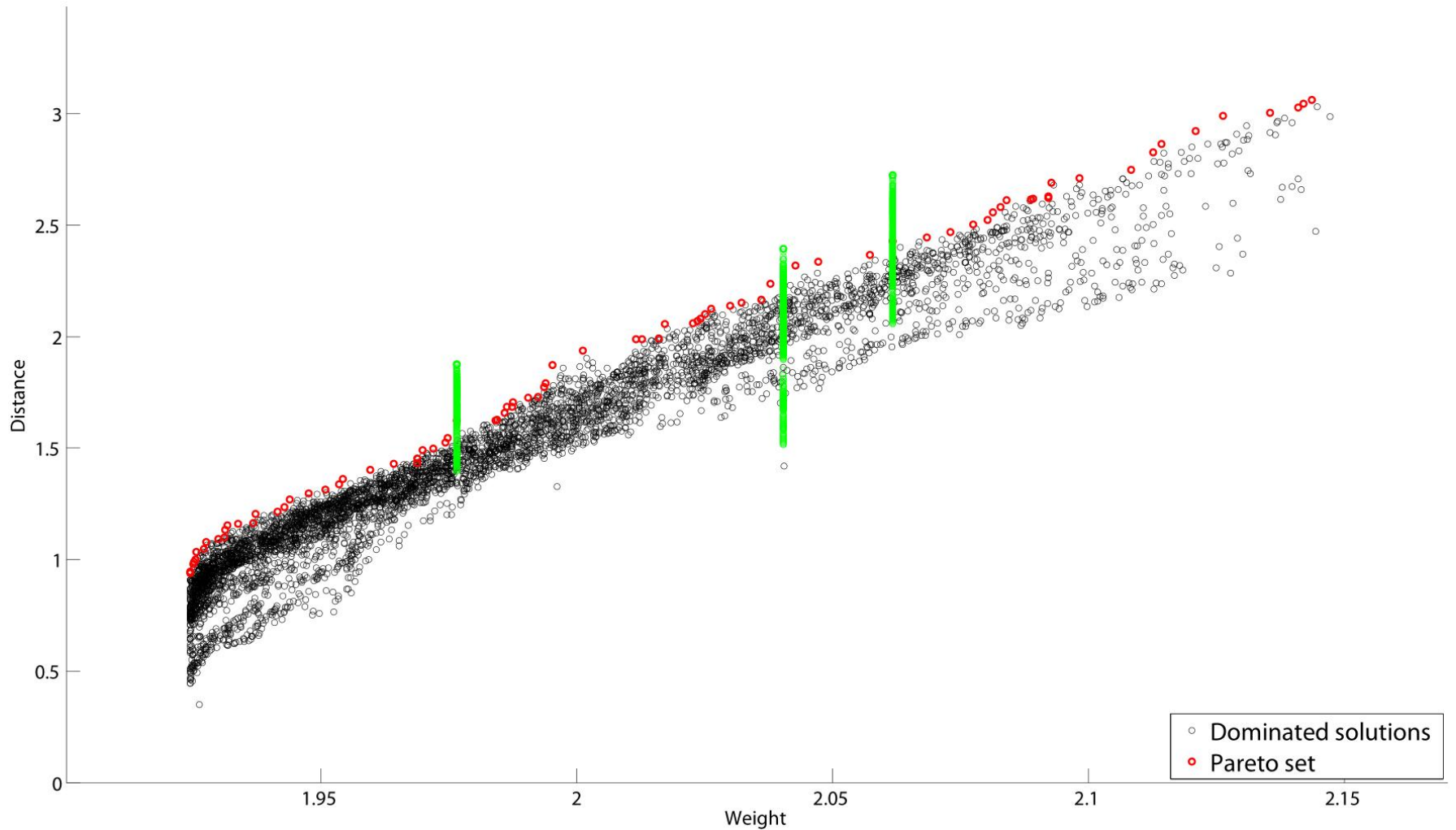
UiO : **University of Oslo**



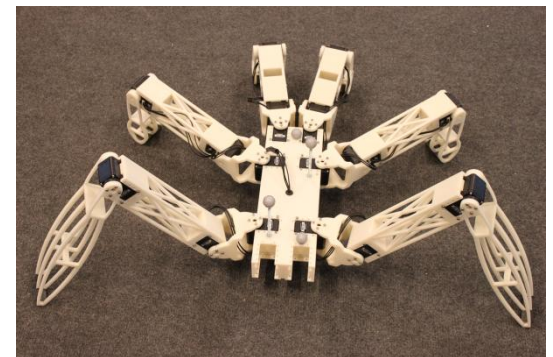
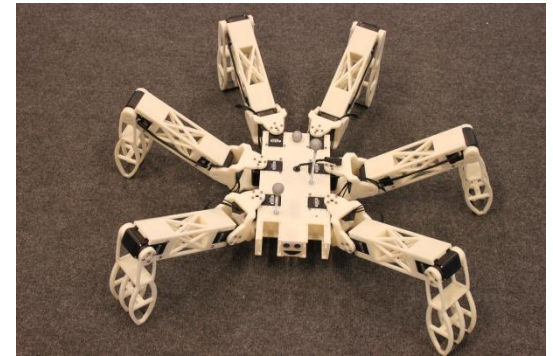
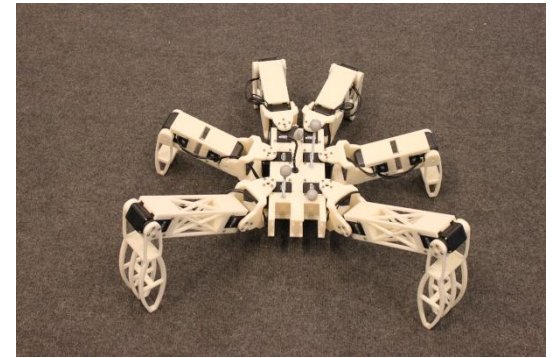
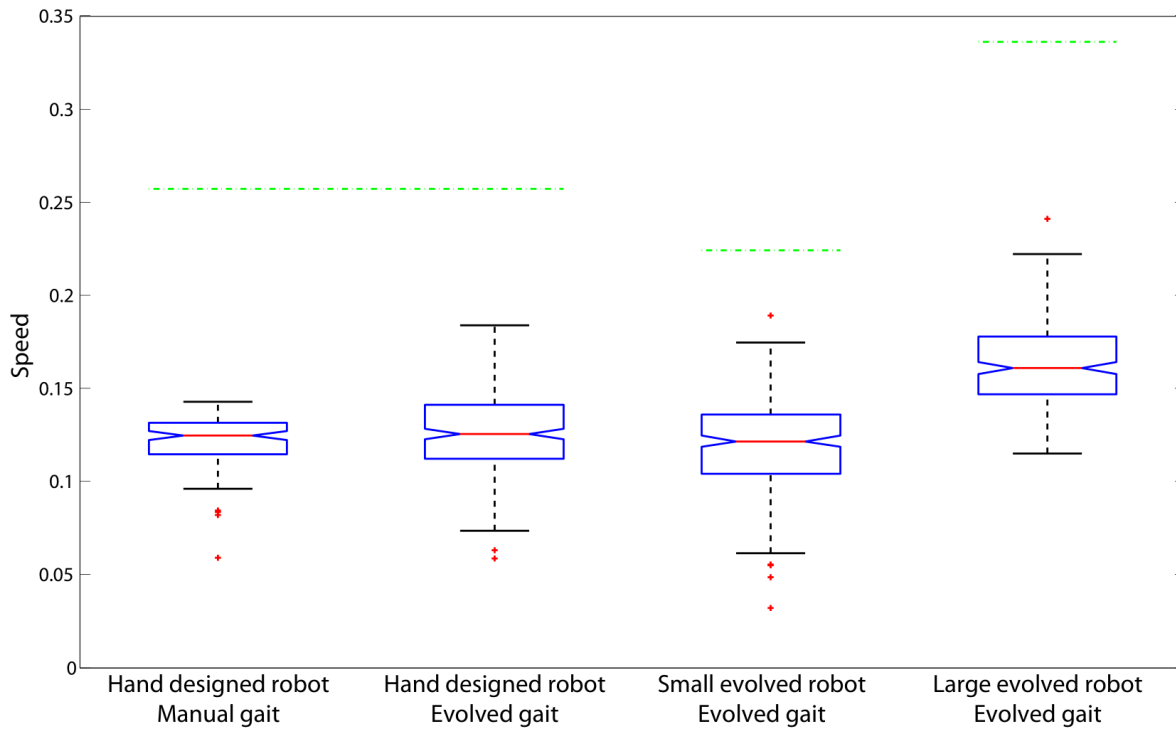
Introduction

- Co-evolution of robot morphology and control often ends in premature convergence
- Our proposed two-phase method to tackle this:
 1. Evolve control + morphology traditionally
 2. Lock morphology and evolve control from scratch

Simulation results



Verified on physical robots



Conclusion

- Using the two-phase approach surpassed the initial convergence by over 10%
- The robots performed similarly in the real world