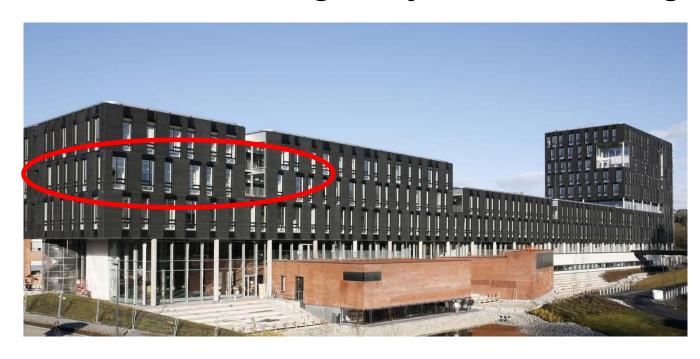


Kyrre Glette
Robotics and Intelligent Systems group, Department. of Informatics
RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion

A taste of ROBIN research related to AI & ML



#### Robotics and Intelligent Systems research group (ROBIN)



- 4 scientific faculty
- 1 lecturer
- 1 engineer
- 5 adjuncts from research& industry
- 3 postdocs (incl RITMO)
- 7 phds (incl RITMO)









































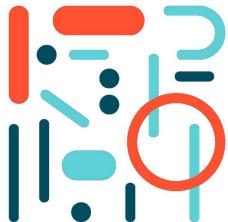




### RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion



- Musicology
- Psychology
- Informatics



# Can we find body-behavior approaches exploiting real-world characteristics?

- Self-reconfiguring robot platform
  - Reconfiguration mechanism too slow to be actively used in gait
- Allows testing multiple morphological combinations using the same robot
- Real world evolution of morphology and control

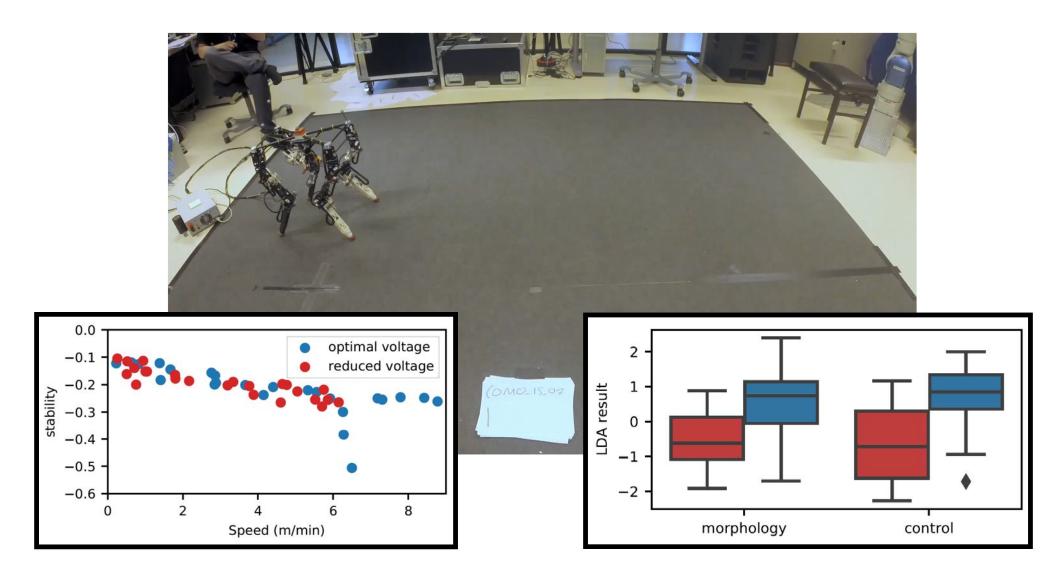


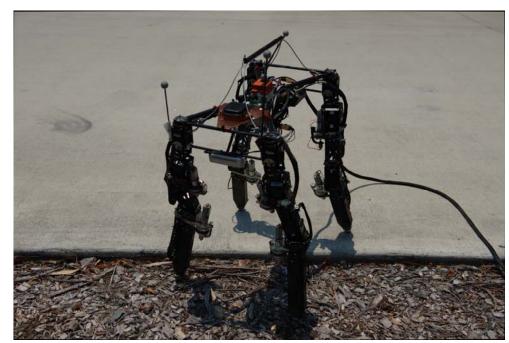




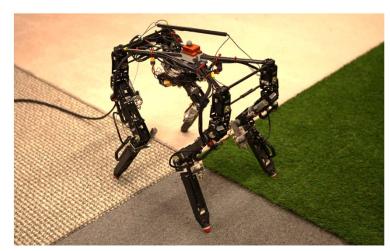


#### Real world morphology and control evolution





### Terrain characterization & classification Online adaptation of morphology

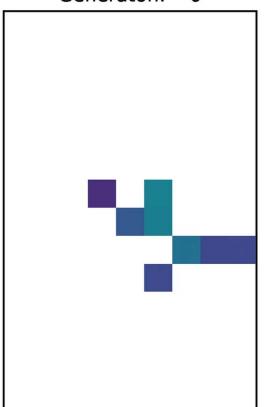




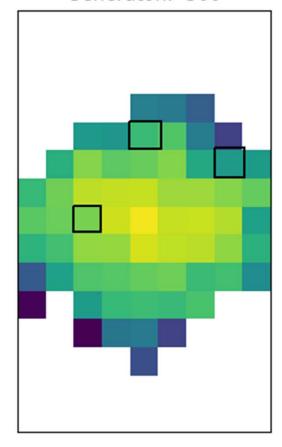


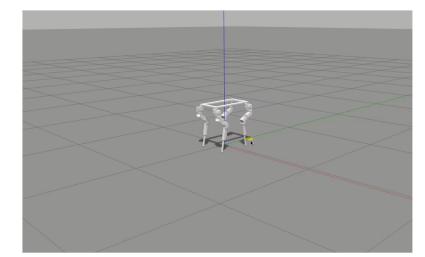
## **Quality-diversity algorithms Building a repertoire of solutions**

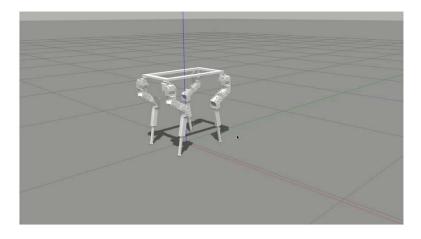
Generaton: 0



Generaton: 300







turn rate



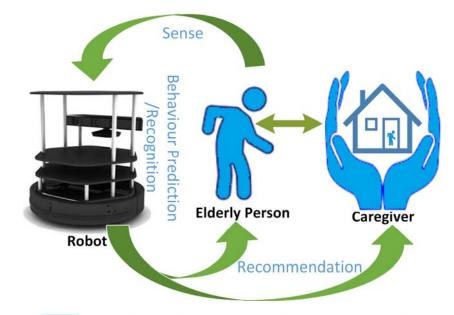
## MECS: Multi-sensor Elderly Care Systems (Tørresen)

**Research Council of Norway grant 247697** 

Goal: Create and evaluate multimodal mobile human supportive systems that are able to sense, learn and predict future events.









# INTROMAT: INtroducing personalized TReatment Of Mental health problems using Adaptive Technology (Tørresen) (2016-2021)

Research Council of Norway grant 259293



Goal: Increase access to mental health services for common mental health problems by developing smartphone technology which can guide patients.

<a href="http://intromat.no">http://intromat.no</a><a href="http://intromat.no">Project Manager:</a><a href="http://intromat.no">Haukeland Univ. Hospital</a>, Bergen

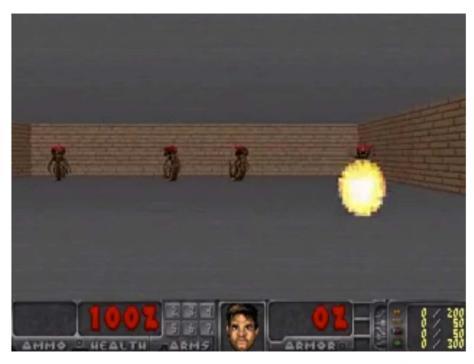
Funding: IKTPLUSS Lighthouse, Research Council of Norway



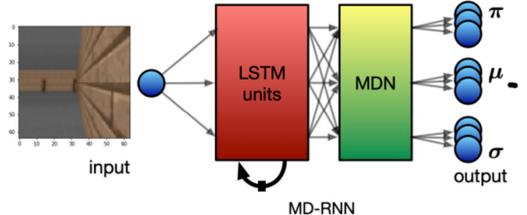
### UiO: Department of Informatics EPEC

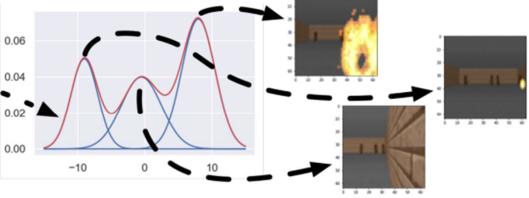


#### World models and predictions. Real vs "dream" (Ellefsen)









Gaussian mixture model

interpretations of components