

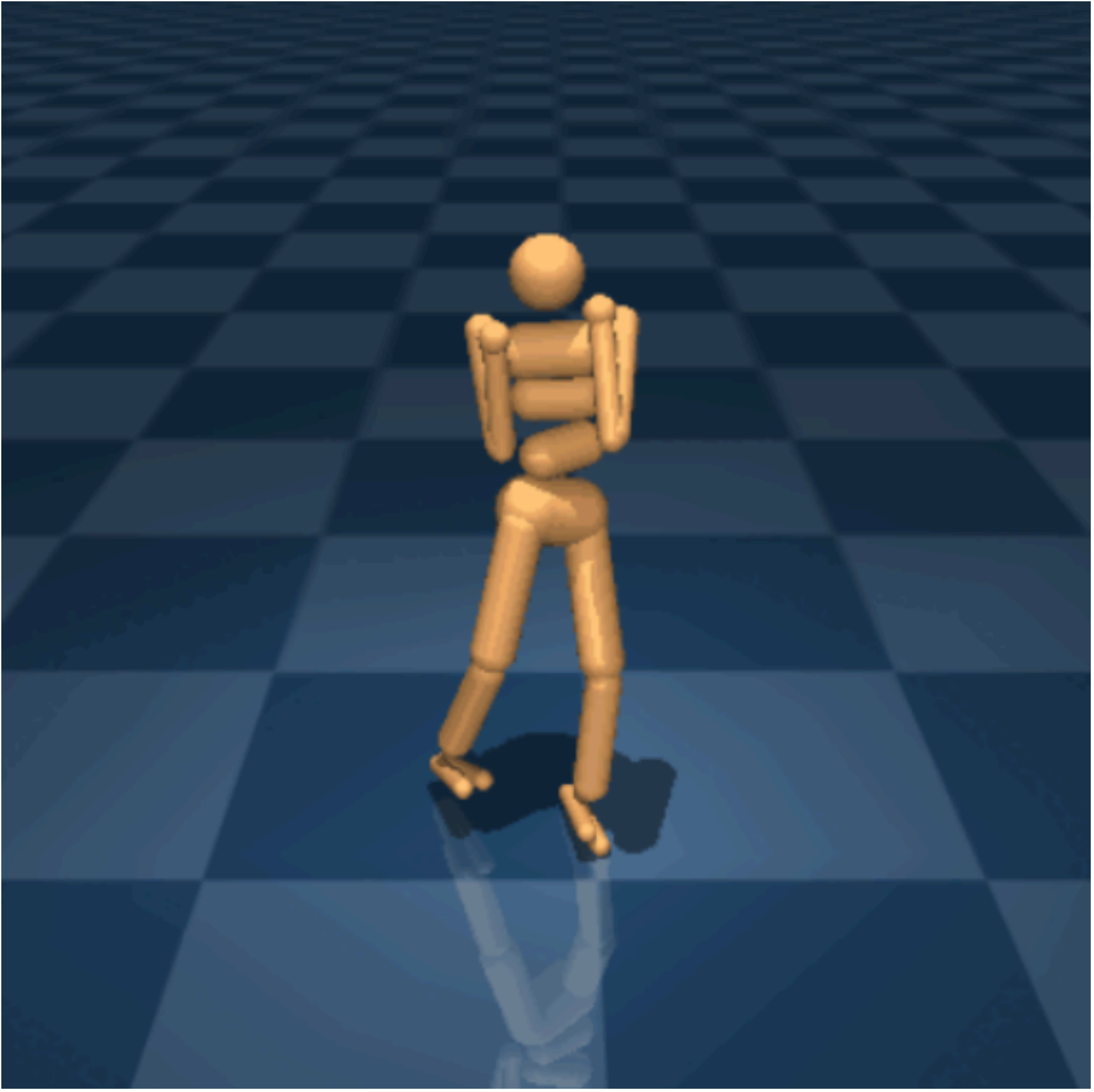
FCAI

fcai.fi

	Model-free	Model-based
--	-------------------	--------------------



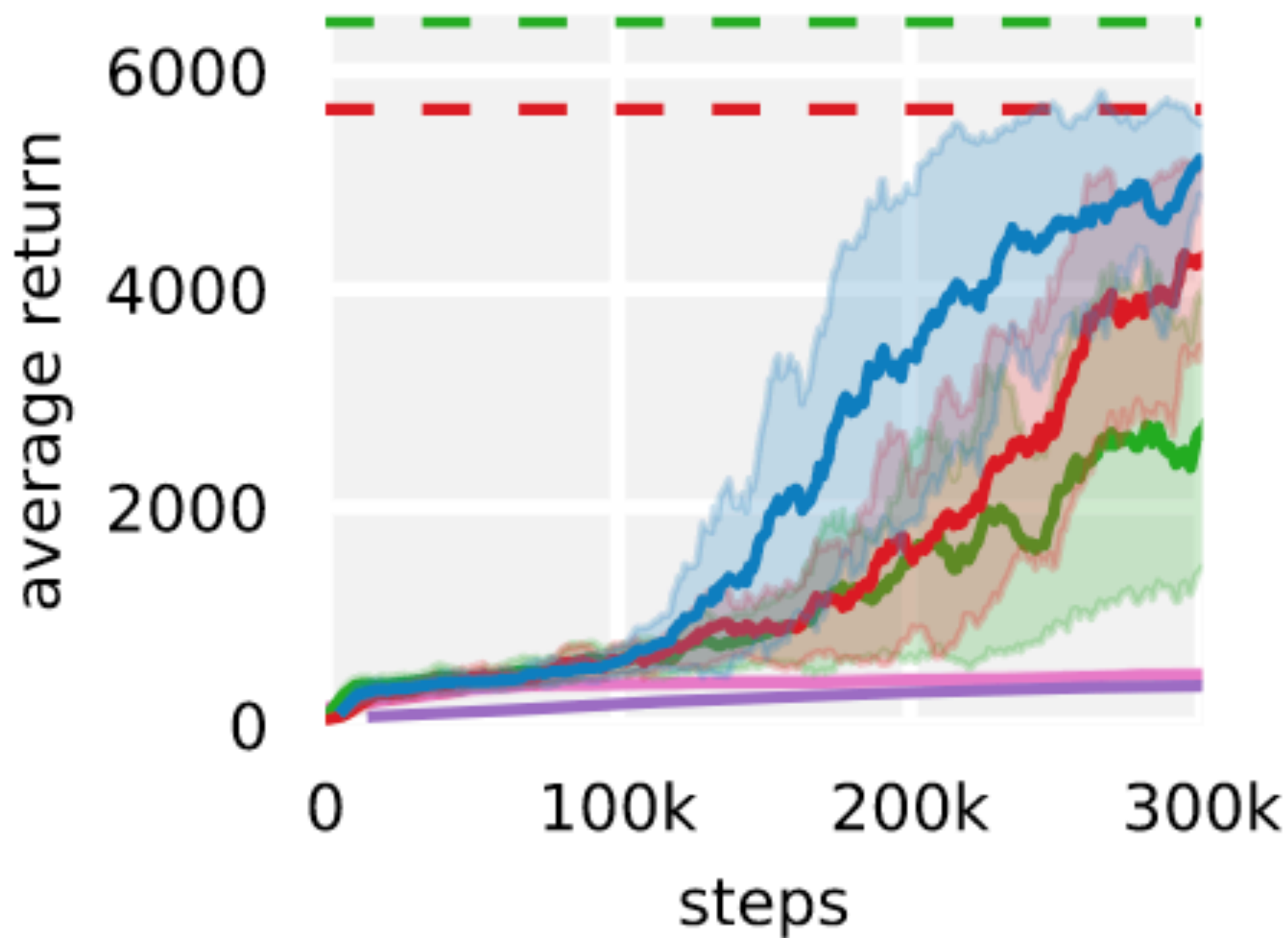




Model-free vs Model-based RL



Humanoid

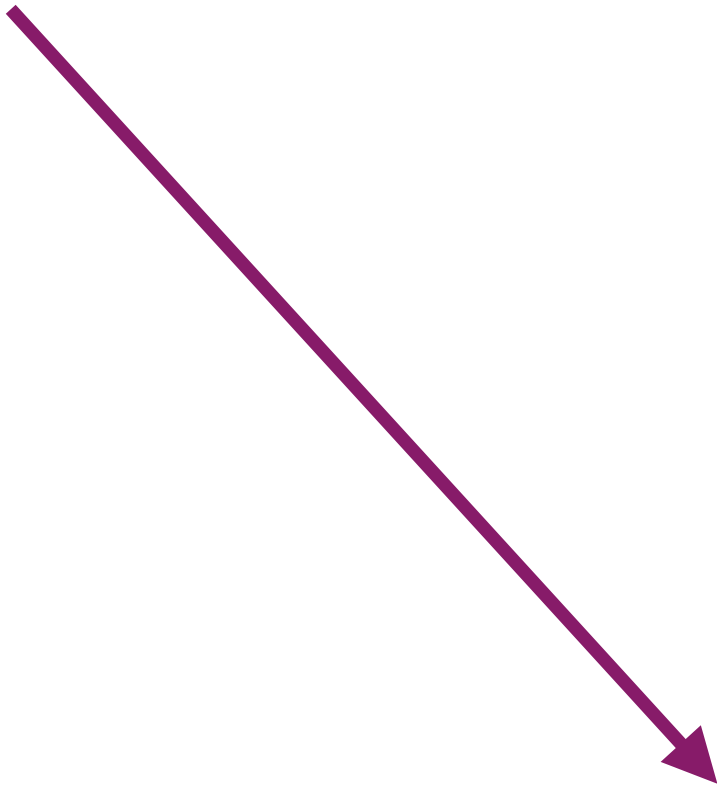


Tutorial Model-Based Methods in Reinforcement Learning @ ICM 2020 by Igor Moradat and Jesic Harrick

Best asymptotic performance



Sample efficient




	Model-free	Model-based
--	-------------------	--------------------

Asymptotic performance



Depends

	Model-free	Model-based
Asymptotic performance		Depends

Sample efficiency



	Model-free	Model-based
Asymptotic performance	✓	Depends
Sample efficiency	✗	✓

**Computation at
deployment**



	Model-free	Model-based
Asymptotic performance	✓	Depends
Sample efficiency	✗	✓
Computation at deployment	✓	✗/✓

Adapting to new tasks



	Model-free	Model-based
Asymptotic performance	✓	Depends
Sample efficiency	✗	✓
Computation at deployment	✓	✗/✓
Adapting to new tasks	✗	✓

<h1>Exploration</h1>		
----------------------	---	---



Model-free vs Model-based RL

	Model-free	Model-based
Asymptotic performance	✓	Depends
Sample efficiency	✗	✓
Computation at deployment	✓	✗/✓
Adapting to new tasks	✗	✓
Exploration	✗	✓

What is a “Model”?

*Definition: a model is a representation that **explicitly** encodes knowledge about the structure of the environment and task.*