Czech Technical University in Prague
Faculty of Electrical Engineering

Department of Cybernetics

BACHELOR PROJECT ASSIGNMENT

Student: Silvestr S t a n k o

Study programme: Cybernetics and Robotics

Specialisation: Robotics

Title of Bachelor Project: Neural Networks for Humanoid Robot Control

Guidelines:

Explore available systems for physical simulations suitable for humanoid (bipedal) robots experiments and find the appropriate model. Explore various types of neural networks for the robot control. Focus mainly on recurrent neural networks. Propose and implement neural network including the training algorithm. Check the methods on selected experimental scenarios**.**

Bibliography/Sources:

[1] R. J. Williams and D. Zipser: A Learning Algorithm for Continually Running Fully Recurrent Neural Networks, 1989.
[2] D. Silver, et al.: Deterministic Policy Gradient Algorithms, Proceedings of the 31th International Conference on Machine Learning, ICML 2014, Beijing, China, 21-26 June 2014.

Bachelor Project Supervisor: Ing. Zdeněk Buk, Ph.D.

Valid until: the end of the summer semester of academic year 2016/2017

L.S.

prof. Dr. Ing. Jan Kybic
Head of Department

prof. Ing. Pavel Ripka, CSc.
Dean

Prague, December 18, 2015