

CMPE58Y Robot Learning

Spring 2016

Assignment 1 - Due: 17.02.2016 14:00

1. Read the following three papers/reports which introduced developmental approach in embodied agents from different perspectives. **Explain** the reasons behind use of different terminologies, **discuss** the differences and common points.
 - Asada, M., MacDorman, K. F., Ishiguro, H., and Kuniyoshi, Y. (2001). Cognitive developmental robotics as a new paradigm for the design of humanoid robots. *Robotics and Autonomous Systems*, 37(2), 185-193.
 - Weng, J., McClelland, J., Pentland, A., Sporns, O., Stockman, I., Sur, M., and Thelen, E. (2001). Autonomous mental development by robots and animals. *Science*, 291(5504), 599-600.
 - Zlatev, J., and Balkenius, C., 2001, Introduction: why epigenetic robotics? In C. Balkenius, J. Zlatev, H. Kozima, K. Dautenhahn and C. Breazeal (eds), *Proceedings of the First International Workshop on Epigenetic Robotics*, Vol. 85, Lund University Cognitive Studies, pp. 1-4.
2. Read the following paper and discuss what type of IM has been followed. (Knowledge-based-novelty or knowledge-based-prediction-error or competence-based?). You may need to read the related text in Chapter 3 of the book *Developmental Robotics*.
 - Ugur, E., Dogar, M. R., Cakmak, M., and Sahin, E. (2007, July). Curiosity-driven learning of traversability affordance on a mobile robot. In *Development and Learning, 2007. ICDL 2007. IEEE 6th International Conference on* (pp. 13-18). IEEE.
3. Have a look at <http://icdl-epirob.org/>