Developmental Machine Learning: Machines that learn like children ... and help children learn better

Current the use of real robotic platforms for evaluating these models has led to highly efficient unsupervised learning methods, enabling robots to discover and learn multiple skills in high-dimensions in a handful of hours. I will discuss how these techniques are now being integrated with modern deep learning methods. Finally, I will show how these models and techniques can be successfully applied in the domain of educational technologies, enabling to personalize sequences of exercises for human learners, while maximizing both learning efficiency and intrinsic motivation. I will illustrate this with a large-scale experiment recently performed in primary schools, enabling children of all levels to improve their skills and motivation in learning aspects of mathematics.