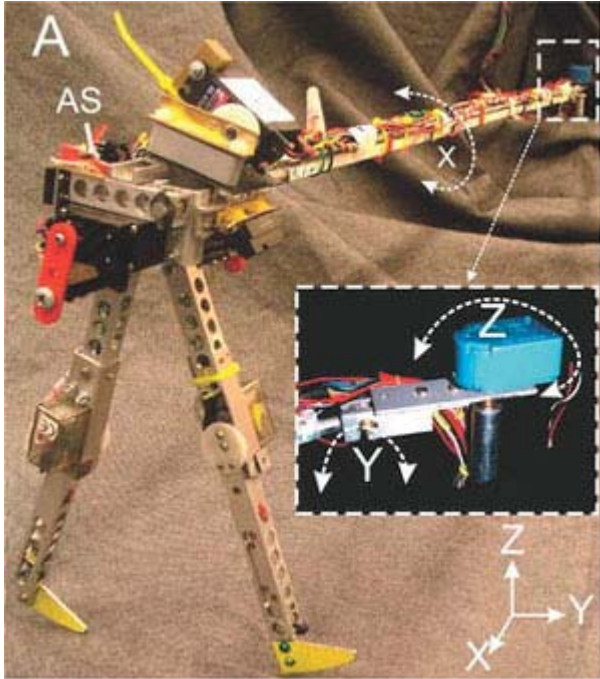




## RunBot: World's Fastest Walking Robot



Reporting in the latest issue of the *PLoS Computational Biology*, an international group of scientists from Germany and the United Kingdom developed a bipedal walking robot, capable of self-stabilizing via a highly-developed learning process.

From the study abstract:

In this study we present a planar biped robot, which uses the design principle of nested loops to combine the self-stabilizing properties of its biomechanical design with several levels of neuronal control. Specifically, we show how to adapt control by including online learning mechanisms based on simulated synaptic plasticity. This robot can walk with a high speed ( $>3.0$  leg length/s), self-adapting to minor disturbances, and reacting in a robust way to abruptly induced gait changes. At the same time, it can learn walking on different terrains, requiring only few learning experiences. This study shows that the tight coupling of physical with neuronal control, guided by sensory feedback from the walking pattern itself, combined with synaptic learning may be a way forward to better understand and solve coordination problems in other complex motor tasks.

Make sure you check this amazing video (1 min 46 sec):



**The paper:** [Adaptive, Fast Walking in a Biped Robot under Neuronal Control and Learning](#) (Manoonpong P, Geng T, Kulvicius T, Porr B, Worgotter F (2007) Adaptive, Fast Walking in a Biped Robot under Neuronal Control and Learning. *PLoS Comput Biol* 3(7): e134)

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