“Why Optimize the Morphologies of Robots?”

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Refreshments at 3:30, Upson Hall Lounge

Abstract

Typically, robot body plans are hand designed, while their controllers are optimized automatically. Evolutionary robotics affords the opportunity to co-optimize both the machine's body plan as well as its controller. However, this increases the complexity of the design method, placing an onus on the investigator to prove why this added complexity is warranted. In this talk I will provide several such rationales, which will lead us into an investigation of evolutionary dynamics, categorization, locomotion, and the crowdsourcing of robotics.

Biographical sketch

Josh Bongard is an associate professor in Computer Science at the University of Vermont. He was named a Microsoft Research New Faculty Fellow and a member of the TR35: MIT Technology Review’s top 35 innovators under the age of 35. In 2011 he was awarded a Presidential Early Career Award for Scientists and Engineers (PECASE) by U. S. President Barack Obama. He currently serves as a vice chair of the UVM Complex Systems Spire, and is the co-author of the popular science book entitled "How the Body Shapes the Way We Think: A New View of Intelligence" (MIT Press). His interests include evolutionary robotics, crowdsourcing and machine science.