Abstract

Evolutionary robotics is a way to design adaptive and autonomous machines using algorithms inspired by biological evolution. The population of robots is created in a virtual world. Evolutionary algorithm observes their performance, deletes low-performing robots and reproduces high-performing robots. However, the algorithm often assigns high fitness to robots not performing optimally, which is often obvious to a human observer presented with the badly-performing robot. One way to solve this problem is to allow the human observer to indicate which robot she prefers and to take these preferences into consideration during the selection stage. The performance of the observer (in terms of robots evaluated per unit of time) is the bottleneck of algorithms of this kind. Here I present an algorithm which can utilize preferences simultaneously provided by two human users. I measure wall clock time required for the algorithm to solve a test problem using input from two users and find that it performs better than the same system interacting with a single user. This result hints at a possibility for multiple users to collaborate to solve robot behavior optimization tasks more efficiently.