

Research Presentation
Wednesday, March 1, 2017

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Time: 12:45 p.m.

Room: McGraw 122

Brief Question and Answer Session following presentation.

Abstract: Black-box algorithms are general-purpose techniques for solving search and optimization problems under conditions in which little or no problem-specific information is available. Very often, these techniques are inspired by natural processes such as biological evolution. Recently there has also been a renewed interest in applying methods from computer science to problems in evolutionary biology by viewing evolution as a computational process. These processes can then be examined by standard tools from the analysis of algorithms.

In this talk I will present some exciting recent work coming out of a three-year interdisciplinary project between theoretical population genetics and the theory of evolutionary algorithms. I will sketch a few results to demonstrate how clues from biological models can help to understand the time complexity of some black-box algorithms on certain problems. Finally, I will discuss ways to build bridges between theory and practice by studying instance distributions that are closer to real-world problems.