

Invariant Theory for Computer Scientists

Abstract

This talk is aimed to give a gentle, high level introduction to Invariant Theory, by describing some of its main objects, problems and results. This study of what *does not* change in certain dynamic processes interacts with many mathematical fields including group theory, commutative algebra and algebraic geometry, and is a central to modern physics. I will stress some of the many facets which interact with computational complexity and optimization. In particular, we'll see how natural objects, problems and results familiar in computer science appear naturally in this field. No special background is assumed.