

Title: Combinatorial representation theory

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Abstract: In representation theory, abstract algebraic structures are represented using matrices. In combinatorial representation theory, combinatorial objects are used to model these representations. In particular, certain combinatorial objects provide a very elegant description of representations of symmetric groups. In this case, the interplay between the algebra and the combinatorics is refined enough to provide combinatorial answers to fundamental questions in representation theory of symmetric groups. We will describe these combinatorial objects and see how they can be used to derive important information about representations of symmetric groups.