

## Specht ideals and symmetric point configurations

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The representation theory of the symmetric group is deeply connected with the study of integer partitions. Any irreducible representation of  $S_n$  corresponds to a partition of  $n$  and irreducible representations can be realized by Specht polynomials in the polynomial ring  $\mathbb{Q}[x]$ . A Specht ideal is the ideal generated by all the Specht polynomials of a given shape. We motivate their study through solving symmetric systems of equations. To do so, we consider the poset of Specht ideals with respect to inclusion, which is captured by the dominance order and show that their zero sets can be understood by integer partitions.