

Protein networks: from topology to logic

Roded Sharan

Protein networks have become the workhorse of biological research in recent years, providing mechanistic explanations for basic cellular processes in health and disease. However, these explanations remain topological in nature as the underlying logic of these networks is to the most part unknown. In this talk I will describe the work in my group toward the automated learning of the Boolean rules that govern network behavior under varying conditions. I will highlight the algorithmic problems involved and demonstrate how they can be tackled using integer linear programming techniques. The talk is self contained.