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Adaptive Submodularity: A New Approach to Active Learning and Stochastic Optimization

In this talk, I will introduce a new concept called adaptive submodularity, which generalizes submodular set functions to adaptive policies.

By lifting classic results for submodular optimization problems into the adaptive realm, we recover and generalize several previous results in adaptive optimization, including results for active learning and adaptive variants of maximum coverage and set cover. Applications include machine diagnosis, observation selection and sensor placement problems, and adaptive viral marketing.

Joint work with Andreas Krause.