Two-sided Function Filtering

Abstract
Function filtering enhances dynamic programming methods working on a tree decomposition of the constraint graph. It is based on bounds for tuples: if the lower bound of tuple $t$ is equal to or higher than a suitable upper bound, $t$ can be discarded, decrementing the size of the message to travel in the tree decomposition. We present a new form of lower bound that tightens the lower bound of the original function filtering, so this new version—called two-sided function filtering—is more powerful. We provide experimental evidence of its benefits.