Hyperparameter Grid Search Analysis
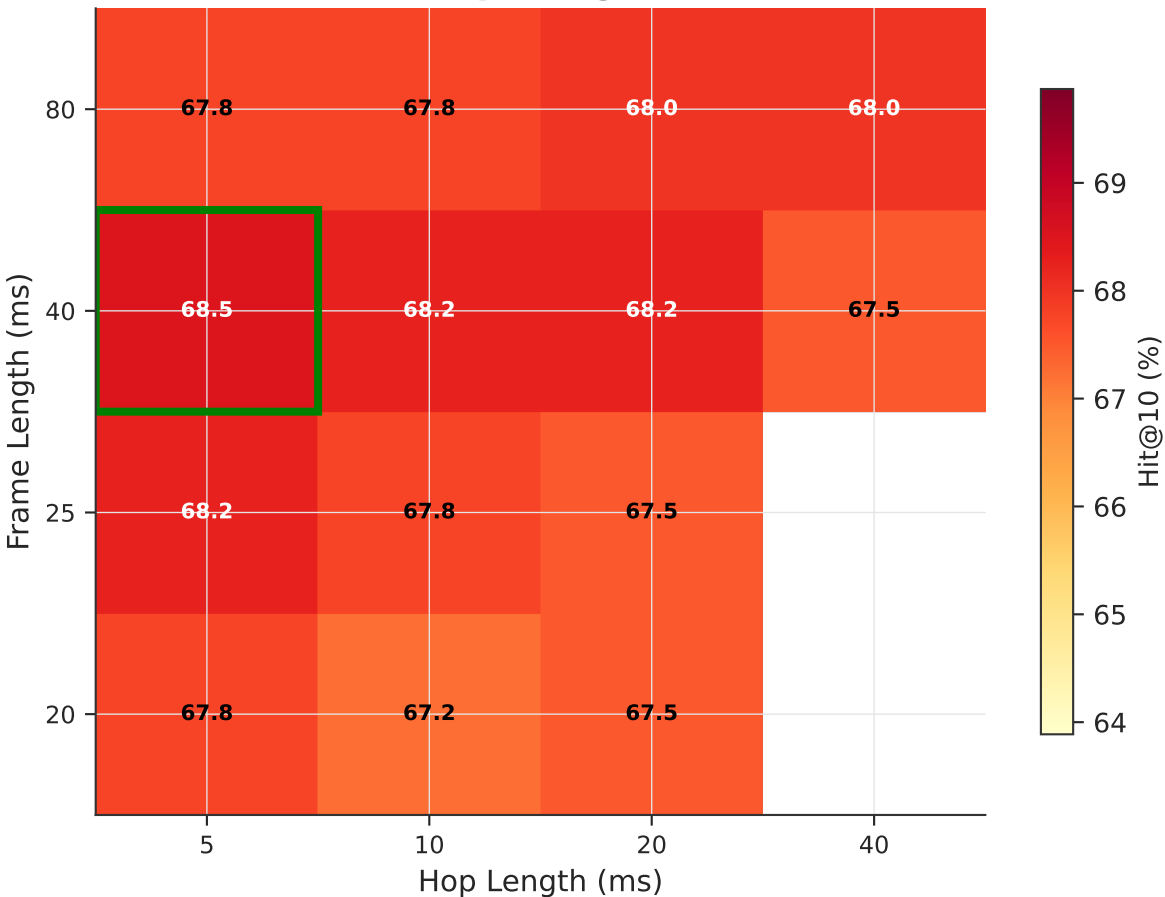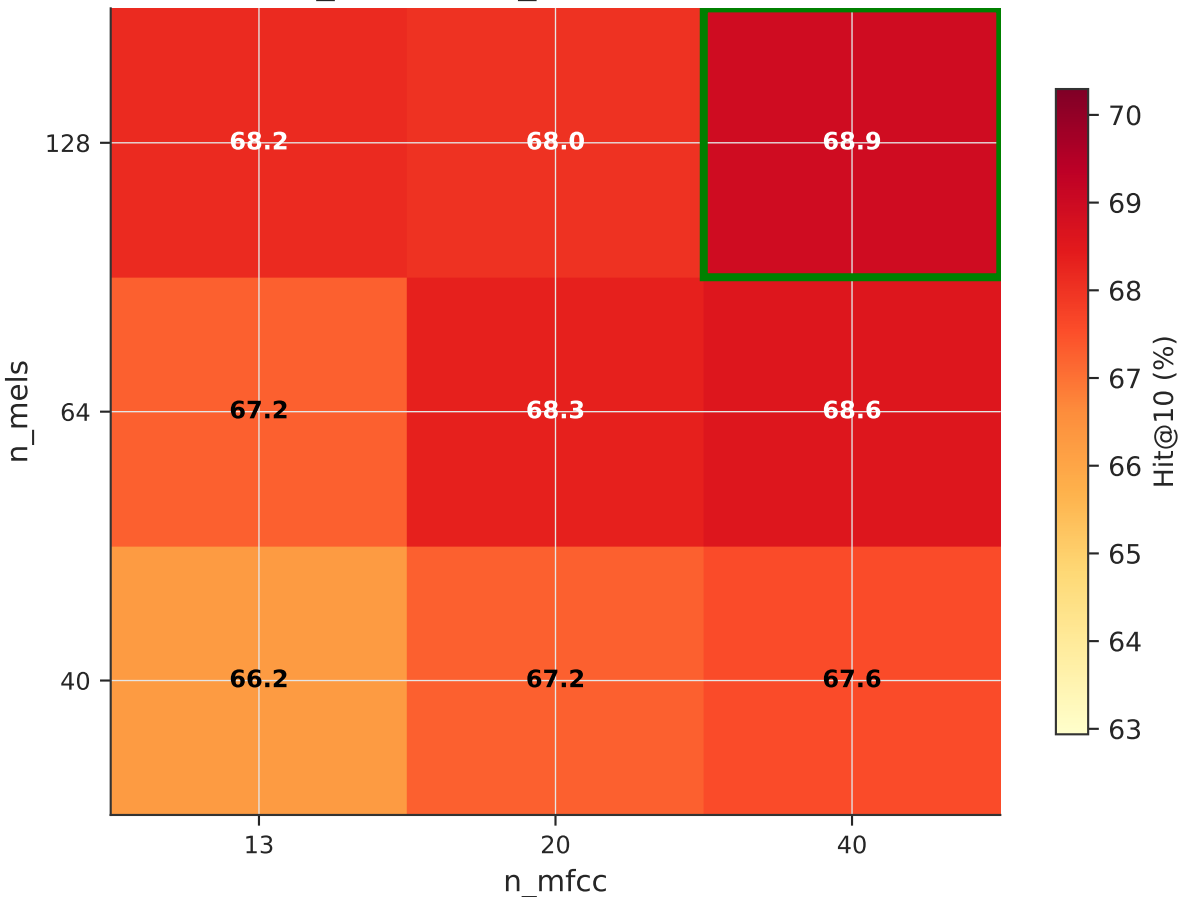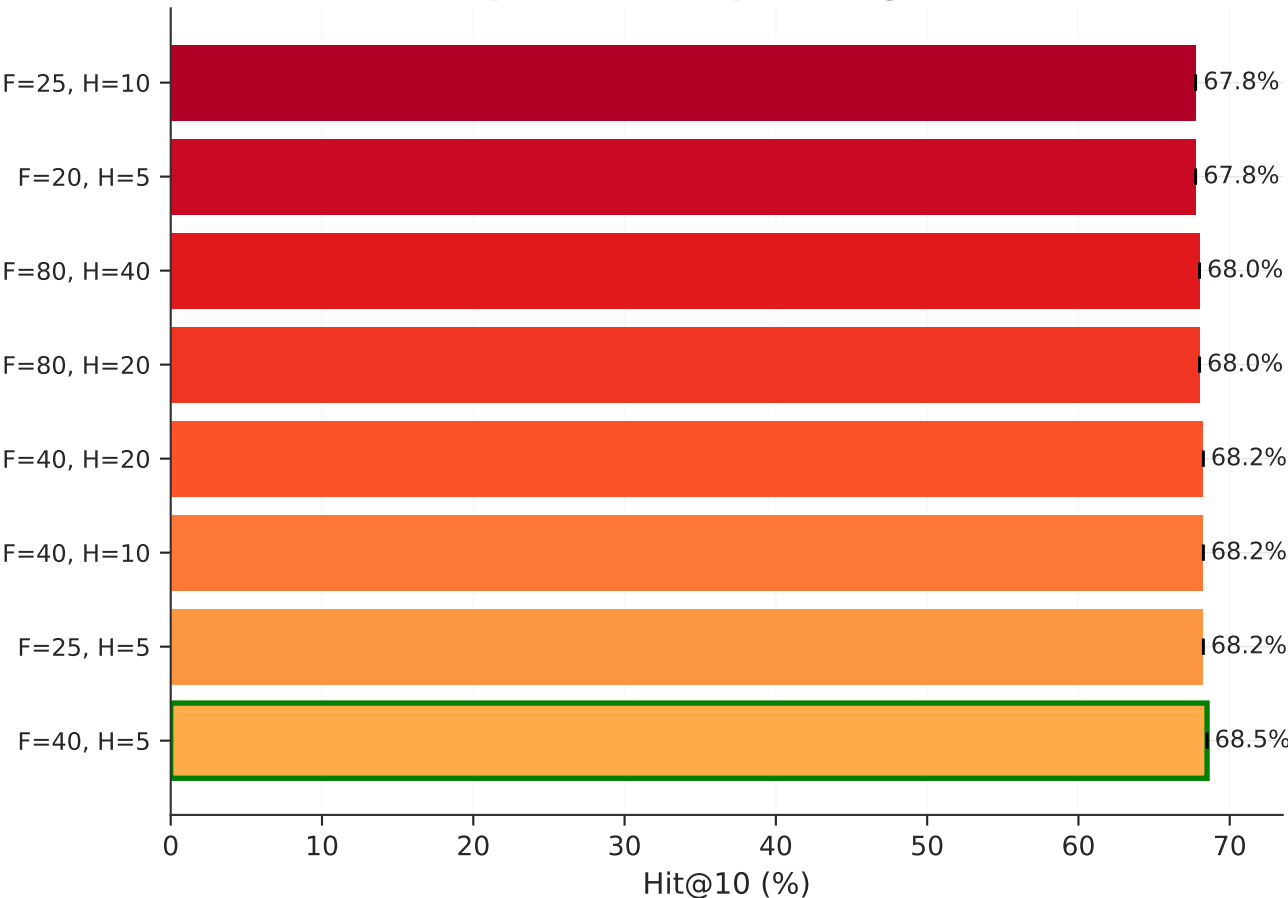
(a) Frame × Hop Length Grid Search

(b) n_mels × n_mfcc Grid Search

(c) Top Frame/Hop Configurations

(d) Window Function Comparison