

corresponds to ALL. Observe that while performance varies significantly with  $\bar{\gamma}$ , for all datasets except for AES-HD (challenging for all deep learning methods) the performance varies smoothly and remains significantly better than random chance; thus,  $\bar{\gamma}$  is not excessively challenging to tune. For reference, we also plot horizontal lines and error bars corresponding to random guessing and the *best* parametric and neural net attribution methods, as indicated in the legend. We leave hyperparameters other than  $\bar{\gamma}$  fixed at their optimal values chosen through random search as described in Appendix C.3.3. Dotted lines denote mean and shading denotes median over 5 random seeds.

Figure 1: Performance of ALL (ours) for budget hyperparameter  $\overline{\gamma} \in \{0.05, 0.1, 0.15, \dots, 0.95\}$ , measured using the oSNR metric (larger is better). Note that the set of valid values for  $\overline{\gamma}$  is (0,1). The blue trace