



Figure 9: Privacy budget of UeDP-Alg f_{ϵ} , UeDP-Alg f_{ϵ}^{+} , and User-level DP as a function of iterations in CONLL-2003, AG, and SEC datasets. UeDP-Alg f_{ϵ}^{+} achieves a tighter privacy budget compared with UeDP-Alg f_{ϵ} and User-level DP.