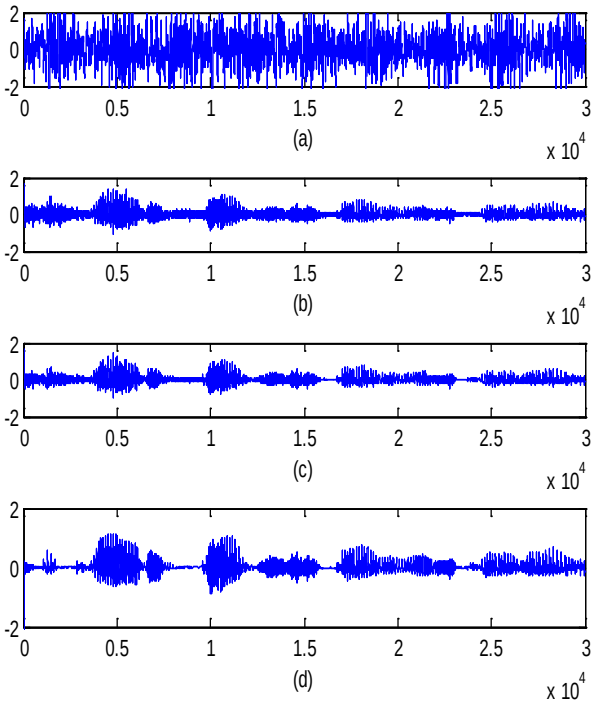

Figure 3: Typical filtering results of Sample –II for Battle Field Noise Removal (a) Contaminated Speech Signal , (b) recovered signal using LMS algorithm, (c) recovered signal using NLMS algorithm, (d) recovered signal using UNANR algorithm.

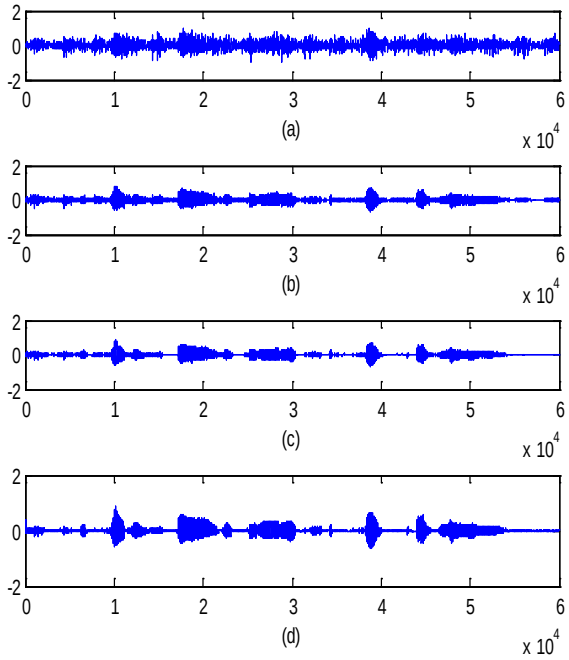

Figure 5: Typical filtering results of Sample-IV for Battle Field Noise Removal (a)contaminated Speech Signal , (b) recovered signal using LMS algorithm, (c) recovered signal using NLMS algorithm, (d) recovered signal using UNANR algorithm.

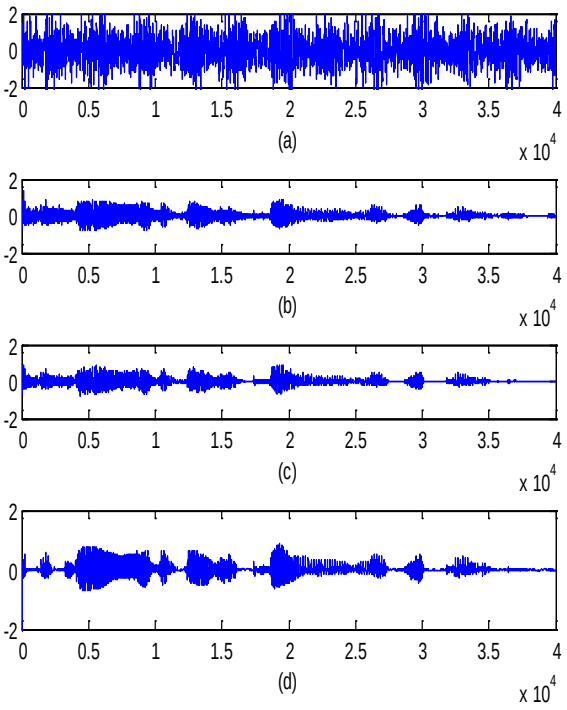

Figure 4: Typical filtering results of Sample-III for Battle Field noise Removal (a)contaminated Speech Signal , (b) recovered signal using LMS algorithm, (c) recovered signal using NLMS algorithm, (d) recovered signal using UNANR algorithm.

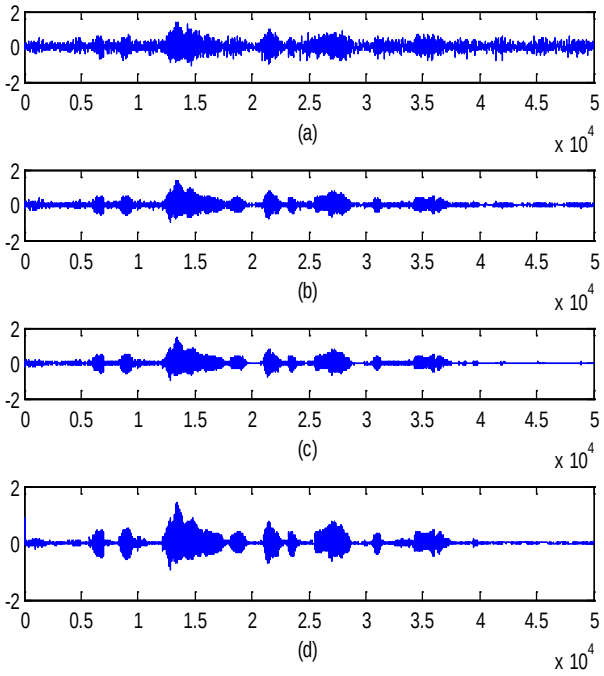

Figure 6: Typical filtering results of Sample- V for Battle Field Noise Removal (a)contaminated Speech Signal , (b) recovered signal using LMS algorithm, (c) recovered signal using NLMS algorithm, (d) recovered signal using UNANR algorithm.

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Table I: SNR Contrast for Battle Field noise removal.

Sl. No	Signal No	SNR Before	LMS algorithm		NLMS algorithm		UNANR algorithm	
			After	Imp.	After	Imp	After	Imp.
1	Sample- I	-1.0501	5.3671	6.4172	5.8468	6.8969	15.232	16.2821
2	Sample- II	-6.6511	2.6063	9.2574	3.3912	10.0423	6.3836	13.0347
3	Sample- III	-5.9657	2.9027	8.8684	3.2206	9.1863	7.7078	13.6735
4	Sample- IV	-2.0585	3.6081	5.6666	6.3626	8.4211	9.5904	11.6489
5	Sample- V	-0.4185	4.9404	5.3589	7.9638	7.9638	10.5626	10.9811
Avg				7.1137		8.50208		13.12406