Task 4

- ★ Future improvement could be studying the implementation of such a system for on-line use, yet flexible enough to produce a carry-on device, we look at feedforward neurocomputer models as a possible answer.

- ★ First, we would want a model that easily produced a parallel implementation, so that the model could be expanded in a multichannel environment without compromising the speed of the system. shows the initial idea for the implementation of the device as a **Single Instruction Multiple Data (SIMD)** architecture.

- ★ The transfer function of the receptor could be performed by a two-layer feed-forward network. Since there is no way of finding out the values of compression and dispersion apart from clinical trials, or even if these values do change in certain conditions, we need to create a structure that is flexible enough to modify the program structure by simple manipulation of parameters.

- ★ Artificial Neural Networks have been used in this model but from the future point of view what can be done is that we can use **Recurrent Neural Networks.**

speech-in-noise perception is a major problem for users of cochlear implants, especially with non-stationary background noise.

- ★ A recurrent neural network (RNN) algorithm can be used for enhancing speech in non-stationary noise and its benefits were evaluated for speech perception, using both objective measures and experiments with Cochlear simulations and Cochlear implant users.

- ★ People have also discussed a bit about the work of RNN. The RNN was trained using speech from many talkers mixed with multi-talker or traffic noise recordings. Its performance was evaluated using speech from an unseen talker mixed with different noise recordings of the same class, either babble or traffic noise.

- ★ The results extend previous findings for Cochlear implant users to mostly unseen acoustic conditions with non-stationary noise.

- ★ In a naive single processor implementation, this could correspond to n2 comparisons, and in a multiprocessor implementation, log(n) comparisons. Both are dependent on the number of signals to be sorted. Can think of a new way by which the sorting time would be constant with the number of channels, and would be easily implementable in analog circuitry, in case this became a future route.

- ★ Can think of double feed-forward neural networks to bring advancement in the field of a cochlear implant.

Double feed-forward neural model, RNN, Parallel implementation, Circulatory implementation, etc are the fields or classes in which one can think to improve or to intensify the effect of cochlear implant in a deaf person’s life.