CONCLUSION AND SCOPE FOR FUTURE WORK

Conclusion

In this project, the technique of compressive sensing is used where an analog signal is sampled at the client side and reconstructed on the server side.

The reconstruction was done using the following three techniques:

1. Orthogonal Matching Pursuit
2. Basis Pursuit
3. Approximate Message Passing

A comparison was done between the above three mentioned algorithms with respect to the following parameters:

1. Time taken for signal reconstruction
2. Error Rate

It was found that OMP algorithm took the least time for reconstruction and had least error rate among the three reconstruction schemes. The system was tested on Windows platform and was found to be performing satisfactorily.

Scope for Future Work

Compressive sensing will teach us how to think properly about minimal complexity and how to exploit it in a computationally efficient manner, and it may even be instrumental in developing a rigorous information theory framework for various areas such as molecular biology. To revolutionize technology we will need to develop hardware and algorithms via an integrated, transdisciplinary approach. Hence, in the future when we design sensors, processors, and other devices, we may no longer speak only about hardware and software, where each of these two components is developed essentially separately. Instead, we may have to add a third category, which we could call hybrid-ware or mathematical sensing, where the physical device and the mathematical algorithm are completely intertwined and co-designed right from the beginning. Hence, looking further into the future, maybe the most important legacy of compressive sensing will be that it has forced us to think about information, complexity, hardware, and algorithms in a truly integrated manner.