

## **Cochlear Implant Sound Processing using Phase Delays**

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Neurophysiological recordings suggest that the cochlear nucleus, the first stage of auditory processing in the brainstem, converts frequency information to timing information in a dynamic fashion where frequencies of interest are processed faster than less relevant information. The frequencies of interest are those whose amplitude is greater than surrounding frequencies. The benefit of this may be improvements in perceived signal-to-noise ratios. This project will investigate incorporating these effects into cochlear implant sound processing for possible improvements in speech perception in noise.

### **Techniques that you will learn:**

- Signal processing for cochlear implants
- Speech perception tests with cochlear implant users
- Psychophysics
- Statistical analysis of results

**This project area is suitable for: PhD Students**