

Time difference of arrival estimation using neural networks

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In this talk I will go through the basics of time difference of arrival (TDOA) estimation using pairs of microphones, which can be used for acoustic sound source localization. Poor TDOA estimation is a common problem in adverse conditions where interference from noise and reverberation dominate the received signals. The generalized cross-correlation (GCC) is the most widely used method for addressing this problem, but can we do better? I present some experimental results showing that extending the GCC with neural networks can indeed improve TDOA estimation accuracy.