



# Clear sounds

## Dan Barry

Dan Barry, DIT Senior Researcher at Audio Research Group – [audioresearchgroup.com](http://audioresearchgroup.com)

“I started my career in DIT as an undergraduate in audio processing. Then I went to Trinity College to do a Masters in dynamic audio compression after which I came back to DIT to do a PhD which I still haven’t finished.

“In any PhD, you must be doing novel research. My research was about sound source separation. You take an audio signal, like from a CD, and write algorithms to track each of the individual audio sources. This way you can listen only to the saxophone or the guitar or the vocals on a song. I began researching it in 2003 and came up with the first algorithm of its kind to do good quality audio source separation.

“It became the first and only real-time separation algorithm available. We put a patent on it in DIT. The policy in DIT is good when it comes to patents. The actual inventor, ie me, is named on the product.

“We decided to put together the Audio Research Group a number of years ago. There was a lot of different research happening in these areas so we decided to consolidate all the common research together and specialise in signal processing for audio.

“Essentially we take digitised representations of audio signals and create mathematical algorithms to make something different. Last year we sold one of our algorithms to Sony for one of their Playstation 3 games. It’s a karaoke game called ‘Sing Star’ and we developed an algorithm to use original source material removing the voice from the full recording.

“We have a large number of researchers here who would all be from electrical and engineering backgrounds. Most of us did Masters and PhDs in related areas like signal processing.

“The group is an example of a way in which you can have a career in research without going into industry. I haven’t finished my PhD yet but most of the rest have and are being funded from places like Enterprise Ireland, Science Foundation Ireland and the EU.

“Generally good research ends up being transferred into industry but in here we direct all our own research. We’re not being ordered by DIT to look more in one area or another. The group develops its own internal expertise and we direct it as we see fit. That being said you don’t just decide one day you’re going to do X. You must identify a valid research question and justify it.”

