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Mr. Anthony Tew BSc,
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Research Area: [Communications and Signal Processing Group](#) » [Audio Lab](#)

Areas of Expertise: Acoustic Modelling, Binaural Audio, Signal Processing: Audio, Spatial Audio

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Biography

Tony spent the first 11 years of his career working in industry. During this period he held research and development posts in the telecommunications sector, where he designed components of the public switched telephone network. For six years he was chief



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electronics designer in a small company manufacturing assistive technology for people with severe disabilities. From there he moved to the Nuffield Orthopaedic Centre in Oxford where, as part of the Engineering Department at the University, he became a design engineer within a multidisciplinary research team whose activities included gait analysis, orthotic device development and compliance monitoring and fracture healing measurement. He also designed assistive technology to provide independent mobility for people with very limited voluntary movements.

Tony's interest in binaural signal processing research began with his move to York, where he has also developed a love of teaching at all levels. His experience in communications and assistive device technologies first led him to investigate algorithms for hearing aids using binaural cues and this has developed into a co-ordinated programme of binaural research thanks to contributions over the years from many excellent students and colleagues. He has extensively investigated the measurement and use of head-related transfer functions (HRTFs) for the individualisation of binaural

spatial audio signals, such as techniques for their interpolation and their rapid measurement from head shape. The work on HRTF synthesis from morphological measure continues in the form of an international collaboration with the University of Sydney. Some fascinating perceptual aspects of spatial audio are being explored in a project jointly funded by the University and a collaborating industrial partner in which we are investigating auditory and other influences on the realism of binaural audio.

Research interests

Binaural audio signal processing, binaural psychoacoustics, acoustic modelling, applied spatial hearing, perceptual listening tests, binaurally-informed digital hearing aids.

Professional activities

These mainly revolve around my interests in learning and teaching. For example, I am a member of the University Forum for the Enhancement of Learning and Teaching, University Teaching Committee, the University Public Lectures Committee, the Science and Society working group, and Chair of

the University Learning and Teaching Projects Committee.

Current Project Areas

- ▶ Non-acoustical methods for estimating head-related impulse responses rapidly from head and ear shape;
- ▶ Understanding how spatial information is impressed on sounds reaching the eardrum;
- ▶ Factors affecting the realism of binaural audio;
- ▶ Transformation of binaural signals using psychoacoustically-informed signal processing.

Taught Courses

I enjoy teaching at all levels. Modules I have taught include:

- ▶ Digital Circuits
- ▶ First Year Laboratories
- ▶ Perception of Sound
- ▶ Alternative Energy
- ▶ Fourier Transforms
- ▶ Digital Filters
- ▶ Audio Algorithms Design & Implementation
- ▶ Signal Processing: Theory and Practice
- ▶ Software Engineering
- ▶ Circuits for Music Technologists
- ▶ Image Processing
- ▶ Industrial Lectures and

Workshops

- ▶ Medical Electronics
- ▶ Transducers and Instrumentation

Teaching Administration

I serve/have served on the following departmental teaching-related committees

- ▶ Electronics Teaching Committee (Chair)
- ▶ Board of Studies for Music Technology (Chair)
- ▶ Electronics Staff-Student Liaison Committee (Chair)

and serve/have served on the following University committees and groups

- ▶ University Teaching Committee
- ▶ Public Lectures Committee
- ▶ Science and Society Working Group
- ▶ Learning and Teaching Projects Committee (Chair)

Publications information is available via the [York](#)

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