1 Prof Mark Gales

Professor of Information Engineering at Cambridge University UK.

Mark's research interests are in spoken language processing, including: speech recognition and speech synthesis; low-resource speech processing; and computer aided language learning.

1. **Deep learning based speech recognition and synthesis**: deep learning has dramatically improved the state-of-the-art in both speech recognition and speech synthesis. This talk describes the underlying building blocks of deep learning and how they can be applied to sequence data in general. The application of these approaches to the specific tasks of speech recognition and speech synthesis will then be described in detail.

2. **Low-Resource Speech Processing**: there are approximately 7000 languages spoken in the world. Speech processing techniques have only been applied to a small subset of these languages. This talk will discuss approaches to applying speech processing techniques such as automatic speech recognition and keyword spotting to low resource languages. The data and tasks associated with the IARPA Babel and MATERIAL programmes will be described.

3. **Spoken Language Learning and Assessment**: Automatic systems that enable assessment and feedback of learners of spoken English are becoming increasingly popular. In addition to being able to accurately assess the ability of the learner to speak English, it is important for these systems to provide reliable, meaningful feedback to learners on the errors they are making. These errors may be in message construction, grammar and choice of word, as well as pronunciation. This talk will present current research in these areas at the Automated Language and Teaching Assessment (ALTA) Institute, funded by Cambridge Assessment English.