

To enrol please complete this form, enclose your seminar fee and mail prior to 13th February, 2006 to:

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course information

course content

ENROLMENT FORM

First Name:

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Method of Payment:
(cheques made payable to Massey University please)

Card Name:

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Signature:

The Institute reserves the right to cancel the seminar or change seminar contents. In the event that the seminar is cancelled participants will receive a full refund.

About the course

The ubiquity of communication networks has led to a wide range in network properties, terminal capabilities, and user environments, and to the demand for *context-aware* services. As a result, a new generation of signal-processing and coding algorithms for audio-visual communication is emerging. These algorithms target scalability, noise suppression, real-time quality estimation, emotional-state detection, and robustness against packet loss and bit errors. This course discusses processing techniques that facilitate effective and efficient communication services and adapt to the physical user environment and other context, with a focus on speech and audio signals.

Who should attend?

The course is aimed at engineers, scientists, and managers seeking additional understanding of the underlying principles of the ongoing revolution in audio-visual communications. Participants are expected to understand basic signal processing and mathematics.

Format

The course will consist of a series of well-illustrated lectures. The course will be taught in two days, in eight 90 minute sessions. Hand-outs of relevant overview papers and of the slide presentations will be provided.

Course dates and venue

20th - 21st February, 2006 (9:00 am - 5.00 pm), Massey University, Palmerston North Campus. Registration from 8.30am Monday 20th February.

Course fee

\$650 (includes course material, handouts, lunches & teas).

Day 1

Speech and audio perception and speech production:

- state-of-the-art models of auditory perception
- speech production mechanism

Source coding for heterogeneous networks:

- basics of quantization, results of rate-distortion theory
- high-rate quantization theory
- transforms and coding
- multiple-description coding
- adaptation to network and context
- jitter buffers

Day 2:

Modelling and coding of speech and audio signals:

- a principle for generic modeling
- transforms and prediction
- application to speech

Signal enhancement:

- spectral subtraction / Wiener filtering
- noise estimation by minimum statistics
- usage of prior information
- impact of nonstationarity

Detection of emotion:

- archetypical emotion types
- features for emotion classification
- subband based emotion classification
- bimodal emotion classification

Signal quality estimation

- subjective quality estimation
- objective quality estimation

Presenters

Bastiaan Kleijn

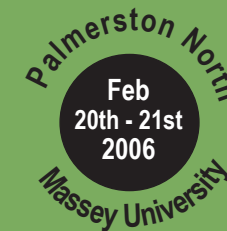
Bastiaan is a Professor at the School of Electrical Engineering at KTH (the Royal Institute of Technology) in Stockholm, Sweden, where he heads the [Sound and Image Processing Laboratory](#). He is also a founder and former Chairman of [Global IP Sound](#), the company that supplies the audio processing for the Voice over IP (VoIP) systems of Skype, Google, and Microsoft; he remains Chief Scientist there. He has written about 150 papers and holds 23 patents. He has Ph.D. degrees from Delft University of Technology (Netherlands) and the University of California. He has held visiting Professor positions at Delft University of Technology, Vienna University of Technology, Graz University of Technology, and Massey University. Before entering academia, he worked at AT&T Bell Laboratories (Research). He has been on the Editorial Boards of the IEEE Transactions of Speech and Audio Processing, IEEE Signal Processing Letters, IEEE Signal Processing Magazine, and the EURASIP Journal of Applied Signal Processing. He is a Fellow of the IEEE.

Liyanage C De Silva

Liyanage received a BSc Eng.(Hons) degree from the University of Moratuwa Sri Lanka in 1985, M.Phil. degree from The Open University of Sri Lanka in 1989, MEng. and PhD degrees from the Univ. of Tokyo, Japan in 1992 and 1995 respectively. He was with the University of Tokyo, Japan, from 1989 to 1995. From April 1995 to March 1997 he has pursued his postdoctoral research as a researcher at ATR (Advanced Telecommunication Research) Laboratories, Kyoto, Japan. In March 1997 he joined The National University of Singapore as a Lecturer, where he was an Assistant Professor till June 2003. Currently he is a Senior Lecturer at Massey University. He has expertise in Digital Image Processing, Speech Processing and Communication theory. He has published over 100 technical papers in these areas in international conferences, journals and Japanese national conventions and holds one Japanese national patent, which was successfully sold to Sony Corporation Japan for commercial utilization. This particular patent is in the area of bimodal emotion recognition and will be utilized in human computer interaction in computer game interfaces. He received the Best Student Paper Award from SPIE (The International Society for Optical Engineering) for an outstanding paper contribution to the International Conference on Visual Communication and Image Processing (VCIP) in 1995. He is a senior member of IEEE USA.

Massey University

Massey University is one of New Zealand's leading educational institutions. It has 4 campuses, and provides a choice of over 200 degrees, certificates and diplomas. In 2003 Massey had a total of 40,000 students, 21,000 of whom were studying by distance. The university has a proud 76-year tradition of academic and research excellence combined with a strong national and international reputation. The Institute of Information Sciences and Technology is Massey University's focal point for quality education and research in the broad areas of Information & Telecommunications, Computer Systems, and Software Engineering.



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