

CHiM  
WORKSHOP

International Workshop on  
Machine Listening in Multisource Environments  
*1st September 2011, Florence, Italy (satellite event of Interspeech 2011)*



# Welcome!



The  
University  
Of  
Sheffield.

*inria*  
informatics mathematics

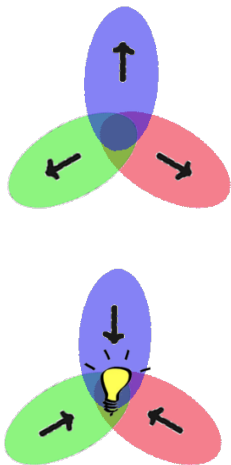


PASCAL  
Pattern Analysis Statistical Modelling and  
Computational Learning



# Workshop Motivation

- Machine Listening lacks a coherent community.
- Machine Listening researchers often identify themselves by **specific application domains**, for example,
  - speech recognition people,
  - music transcription and analysis people,
  - acoustic event detection people,
  - source separation people.
- **Segregation emphasises the differences** between these domains ... this impedes progress on **shared problems**.
- One particularly challenging problem is robustness in multisource environments.
- We hope this workshop can bring communities together to share important insights.



# What is a 'Multisource Environment' ?

- By 'multisource environment' we are intending the following,
  - Environments containing **multiple sources** of sound.
  - The sound sources are typically **individually localised** in space.
  - The activity level of the sources is changing over time.
  - The sound sources may be **static or moving**.
  - There may be some **prior expectations**, but many critical parameters are unknown (e.g. number of sources).
- Multisource conditions lead to challenging tasks, e.g.,
  - **Recognising** distant microphone speech in everyday settings.
  - **Transcribing** a string quartet from a live recording.
  - **Detecting** a specific bird call in a woodland recording.
  - **Enhancing** a target speaker while suppressing multisource noise background.

# The Challenge of Multisource Environments

- **Multisource conditions are normal** in everyday listening environments – and yet they are often treated as a special case.
- The **human auditory system** is highly adept at dealing with multisource conditions,
  - Human ability has been much studied by the *Hearing* and *Computational Hearing* communities.
  - But there is still no deep understanding of how the human ear really works.
  - Computational models (e.g. CASA systems) remain a long way from human ability – a focus on toy problems.
- Historically, BSS and ASR communities have also focused on simple scenarios... but share a feeling that **the time has come to address real-world problems**.
- Real problems may demonstrate the need for significant re-design as simple systems no longer prove adequate.

# Workshop Programme

## Morning

9:00-9:10 Welcome and opening remarks

9:10-9:50 Overview of the CHiME Challenge

9:50-10:40 Oral 1: Challenge papers

10:40-11:00 Morning break (tea and coffee)

11:00-12:15 Oral 2: Challenge papers

12:15-13:45 Buffet lunch

## Afternoon

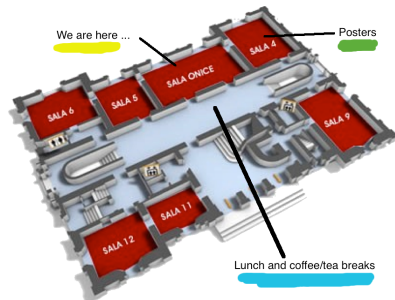
13:45-15:45 Poster session

15:45-16:00 Afternoon break (tea and coffee)

16:00-16:50 Oral 3: Multisource event detection and classification

16:50-17:50 Plenary discussion: results and future evaluation

17:50 Closing



# Notes for Presenters

- **Slides** - please upload your slides onto the computer during the morning break.
- **Timing** - oral presentations should be 20 minutes with 5 minutes for questions and handover.
- **Posters** - please hang your poster during the morning break.

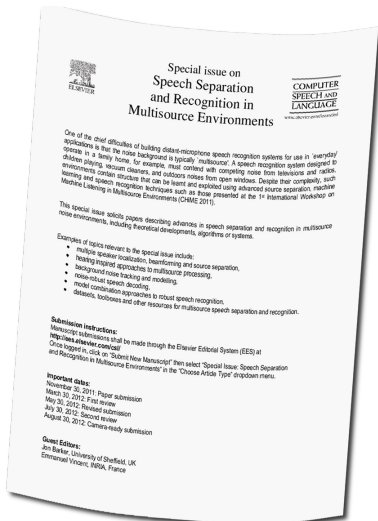


# Special Issue of Computer Speech and Language

## Speech Separation and Recognition in Multisource Environments

### Important Dates

- November 30, 2011: Paper submission
- March 30, 2012: First review
- May 30, 2012: Revised submission
- July 30, 2012: Second review
- August 30, 2012: Camera-ready submission



# CHiME Challenge and Workshop Questionnaire

Feedback is essential for the sustainability of the challenge

## The Questionnaire

- You'll find it in your packs.
- Please complete before 4.00 pm.
- No need to add name unless you wish!
- Place completed questionnaire in the box.

**CHiME CHALLENGE**

Overall rating:  
Challenge presentation:  
Challenge materials:  
Appropriate resources:  
Facilitator:  
Facilitator assistance:

very good  good  average  poor  
 satisfactory  not short  too long  poor  
 very good  good  average  poor  
 satisfactory  too narrow  too broad  
 too simple  too difficult

Comments:

Do you participate in the  
of FACILITATOR/CHiME  
PASCAL/Support/Support:  
CHiME/2007

With CHiME Challenge  
enjoy your

Which would be the more  
or  
or  
or

How would the materials  
or  
or  
or

How would the effort be  
to take in the best features  
or  
or  
or

More generally, how do  
develop?

**CHiME WORKSHOP**

Overall rating:  
Workshop structure:  
Workshop materials:  
Quality of the papers:  
Challenge overview:  
Facilitator:

very good  good  average  poor  
 perfect  too short  too long  poor  
 very good  good  average  poor  
 perfect  too narrow  too broad  poor  
 very good  good  average  poor  
 very good  good  average  poor

Comments:

How regularly would you seriously consider attending it?  
 every year  every 18 months  every 2 years  less

Which are the best realisations to be undertaken?  
 Inception  ACASIS  EVARCA  HSCMA  
 AIRE  WAFPA  other: \_\_\_\_\_

Name (optional): \_\_\_\_\_  
Email (optional): \_\_\_\_\_



# Acknowledgements



- **Financial support:**
- **Organising Committee:** Jon Barker, Dan Ellis, Phil Green, John Hershey, Walter Kellermann, Hiroshi Okuno, Emmanuel Vincent.
- **Technical Committee:** Heidi Christensen, Reinhold Häb-Umbach, Walter Kellermann, Ning Ma, Atsushi Nakamura, Francesco Nesta, Hiroshi Okuno, Alexey Ozerov, Armin Sehr.
- **CHiME Challenge support:** Ning Ma.
- **Admin support:** Gillian Callaghan (Sheffield), Constanza Vannocci (PLS Educational, Italy).
- **Authors:** 80 researchers contributing to today's papers; **Attendees:** 68 delegates.

