

# Lecture

## “Advanced Methods in Automatic Speech Recognition”

### SS 2012

Type	Schedule / Room	Start	Instructor
V3	( für Diplom und Master Informatik, Master SSE und Master MI) Di 11 <sup>45</sup> –13 <sup>15</sup> AH 5 Mi 10 <sup>00</sup> –11 <sup>30</sup> AH 5	03.04. 04.04.	Dr.rer.nat. R. Schlüter, Prof. Dr.–Ing. H. Ney
Ü2	Mi 10 <sup>00</sup> –11 <sup>30</sup> AH 5	11.04. biweekly	M. Nussbaum-Thom

#### Content:

- Recapitulation speech recognition with large vocabulary and linear lexicon
- Search with lexical prefix trees
- Word graphs and word pair approximation
- Time-conditioned search
- Coarticulation and word segments
- Confidence measures and system combination
- Discriminative training
- Speaker adaption and normalization
- Current topics

The lecture covers advanced aspects of automatic speech recognition. Special emphasis is put to decoding/search beyond linear lexica, modelling of words and word boundaries, and discriminative training of speech recognition systems.

#### Assignment:

Applied Computer Science or Field of Specialization

#### Requirements:

Modul (Introduction to) Automatic Speech Recognition or comparable knowledge in the field of automatic speech recognition.

#### References:

- F. Jelinek: “Statistical Methods for Speech Recognition”, MIT Press, Cambridge, MA, 1998.
- D. Jurafsky, D. H. Martin: “Speech and Language Processing”, Prentice Hall, Englewood Cliffs, NJ, 2000.
- R. De Mori: “Spoken Dialogues with Computers”, Academic Press, London, 1998.
- Current publication on automatic speech recognition

#### Others:

The lecture will be given in English.

For more information, please contact:

Dr. Ralf Schlüter, Lehrstuhl für Informatik 6, Tel. 80-21612,  
e-Mail [schluter@informatik.rwth-aachen.de](mailto:schluter@informatik.rwth-aachen.de)