Speech and Speaker Recognition

Doctoral level course
KTH and GSLT

March – June 2007

Practical issues

- Participants
- Program
- Computer accounts
- Lab groups
- Pizza tonight

Participants

• Ansis Berzins	University of Latvia
• Maria Eskevich	Saint-Petersburg State University
• Vera Evdokimova	Saint-Petersburg State University
• Lisa Gustavsson	Stockholm University
• Harald Hammarström	Chalmers, Gothenburg
• Thomas Hansen	Univ. Southern Denmark
• Daniil Kocharov	Saint-Petersburg State University
• Jonas Lindh	Gothenburg University
• Anton Ragni	University of Tartu
• Valentin Smirnov	Saint-Petersburg State University
• Andrejs Vasiljevs	University of Latvia

Schedule Thursday March 29

10.15 Welcome, Introduction *Mats Blomberg Kjell Elenius*

10.30 Probability, Statistics and Information Theory *Mats Blomberg*
11.15 Pattern Recognition *Kjell Elenius*

12.00 - 13.15 Lunch

13.15 Speech Signal Repr., Hidden Markov Models *Kjell Elenius*
14.15 Hidden Markov Models (cont) *Mats Blomberg*

15.00 Coffee break

15.30 HTK practical exercise introduction *Mats Blomberg*
16.00 HTK practical exercise *Mats Blomberg, Daniel Elenius*

18.30 Pizza
TMH Lunch room

Schedule Friday March 30

9.15 HMM (cont), Acoustic modeling *Mats Blomberg*

10.30 Break

10.45 Acoustic Modeling *Kjell Elenius*

13 13.15 Lunch

13.15 Environment robustness (if time) *Kjell Elenius*
14.15 Computational problem exercise *Mats Blomberg*

15.00 Coffee break

15.15 - 16.00 Discussion, Spare time
TMH Seminar Room (close to lunch room)

Computer accounts

- Required for the practical exercise
- Sign agreement + show ID

Practical exercise

- Groups of 2 (one group 1 or 3) students
- Office rooms on this floor

Pizza 18.30

- Any special preferences?

Preliminary Schedule Friday May 11

10.15	Language modeling	*Mats Blomberg*
12.00 - 13.00	Lunch	
13.00	Demonstration of dictation system	*Becky Hincks*
13.15 – 14.45	Search algorithms	*Kjell Elenius*
14.45 - 15.15	Coffee break	
15.15 - 16.30	Speaker Recognition	*Mats Blomberg*

Dead-lines

Date	Subject
April 18	Mail selected topic for term paper to teacher
May 2	Select two papers to review
May 7	Mail exercise solutions to teacher
May 16	Mail draft paper to reviewers and the teacher
May 25	Reviewers return comments to author
June 1	Mail final paper to teacher and the reviewers

Term paper

- Suggested topics
  - Own work and experiments after discussion with the teacher
  - Further experiments on the practical exercise corpus
    - Train on all speakers, error analysis, suggestions in the lab manual
  - Phoneme recognition experiments on larger corpus (e.g. TIMIT or WAXHOLM)
  - Language models for speech recognition
  - Limitations in standard HMM and ways to reduce them
  - Pronunciation variation and their importance for speech recognition
  - New search methods
  - Techniques for robust recognition of speech
  - Speaker recognition topics: impersonation, forensics, channel and score normalisation, etc.