Teaching

Graduate level

Associate Professor David House
Director of graduate studies

Graduate students comprise about one third of the personnel at the department. Graduate studies towards the Doctor of Science degree require a minimum of four years after the M.Sc. graduation. Since most students are financed by research projects this time is generally exceeded.

The requirements include theoretical studies and a thesis. The thesis may be composed of a number of publications. The theoretical studies are individually tailored within the domain of graduate courses. Requirements include participation in research seminars and attending special lectures which supplement literature assignments. Credits are also given for certain undergraduate courses on top of the undergraduate requirements such as courses in linguistics and phonetics taken at Stockholm University. In addition to the teaching arranged by the staff at the department, special "bullet"

courses are organised every year. At such an event a well-known researcher is invited to give a course during a limited period of time, typically a week. Several students at the department have participated in European Summer School and similar summer schools in Europe.

The graduate studies are organised according to two main programmes, with two subtopics each.

1. Speech and Music Communication

The Speech and Music Communication programme includes studies of human communication primarily with the help of acoustic signals such as speech and music. Communication with

visual signals such as facial gestures during speech production is also included. The programme contains descriptions, theories, models and applications covering all parts of the communication chain: production - acoustic transmission - perception - understanding or impression.

The programme has two subtopics**: *Speech Communication*** and ***Music Acoustics.***

2. Acoustic Signal Processing

The Acoustic Signal Processing programme covers theory and application in the field of acoustic signal processing, signal coding and information transmission, related to human sound production and signal processing by the human senses.

The programme has two subtopics***: Hearing Technology*** and ***Speech Signal Processing.***

Graduate School of Language Technology (GSLT) 2003

Starting the fall of 2001 the department is involved in the new national Graduate School of Language Technology (GSLT). It is one of 16 new national graduate schools funded by the Swedish government. It is hosted by Faculty of Arts, Göteborg University, and is a collaboration between leading centres in language technology in Sweden. Besides Göteborg University, the following partners are designated by the Swedish government: Högskolan i Borås, Högskolan i Skövde, Växjö University, Chalmers University of Technology, KTH (Royal Institute of Technology), Linköping University, Stockholm University, Lund University and Uppsala University. Further academic institutions may be added to the graduate school. Students may be placed at any of these institutions. The school aims to integrate research on speech and language and to provide a sound basis in both theoretical foundations and applications oriented research. It is committed to an international profile and welcomes applications from outside of Sweden. Five doctoral students from the department are directly involved and supported by this school.

Rolf Carlson represents KTH on the GSLT board.

GSLT and TMH: Automatic recognition of speech (5 cr)

Teacher: Mats Blomberg

A 5 point graduate course was given with the title "Automatic Recognition of Speech". The course ran from September 2003 through February 2004 and had 8 participants from TMH and from GSLT (The national Graduate School of Language Technology). Mats Blomberg was head teacher and responsible for the syllabus. Lectures were also given by Kjell Elenius, Giampiero Salvi, and Alexander Seward.

Bullet course: Lecture series on ubiquitous computing and multi-lingual communication

Alex Waibel, Universität Karlsruhe and Carnegie Mellon University, June 16-18, 2003

Lecture series 1. CHIL Computing to Overcome Techno-Clutter

These lectures proposed a transition to a third paradigm of computer use, in which we let people interact with people, and move the machine into the background to observe the humans' activities and to provide services implicitly, that is, -to the extent possible- without explicit request. The many challenges of such a system were discussed and several multimodal interface technologies developed to meet these challenges were exemplified.

Lecture series 2. Communicating in a Multilingual World

For this topic the problems and current approaches on the road to more effective, more robust and more portable multilingual speech and language systems and services were presented and discussed.