LINKÖPINGS UNIVERSITET OCH TEKNISKA HÖGSKOLA
IDA - Institutionen för datavetenskap
Prof. Sture Hägglund

2003-09-02

Introduction to Research Methodology in Computer Science.

Study group assignments

Optional study groups will be formed. Each study group should select a theme from the list below, or something similar. The selection is to be approved by the course leader, who can also assist in the selection process.

The mission for a study group is to give students time to penetrate a selected methodological topic, to study relevant literature and to provide a forum for discussion of methodological aspects, as treated in the course. In order to get the extra 2 credit points, each group should prepare a document summarizing the results of the study group together with a documentation of the meetings held and the literature studied.

Each group should have a coordinator/chairman. Groups should consist of three or maybe four persons. Groups may be formed by students with a similar research profile, for instance by members of a specific lab, or by students with different background sharing a common interest in the selected topic. The lecture October 28 include time for checking suggested study group topics and time is reserved November 18 to provide opportunities for advice of study groups.

Suggested topics:

1. Research methods in *xxx*, where *xxx* may be a subarea of computer and information science, for instance *human-computer interaction, software engineering, artificial intelligence*, etc.

2. Computer Science Thesis: Science, Engineering, or Art?

3. The nature of computer science.

4. Assessing the quality of research and researchers in computer science.

5. Science vs. technology, computer science as an engineering discipline.

6. The philosophy of AI.

7. Concept and theory formation in computer science.

8. Qualitative methods in computer science research.

9. Scientific discovery in computer science.

Postadress: IDA
 Linköpings Universitetet
 581 83 LINKÖPING
Tel. 013 - 28 10 00
Direkt: 013 - 28 1431, Sekr: 013 - 28 2692
Telefax: +46 13 142231

Address: Dept. of Computer Science
 Linköping University
 S-581 83 LINKÖPING, Sweden
Phone: + 46 13 281000, Direct: +46 13 281431
Telefax: + 46 13 142231
Electronic mail: StuHa@ida.liu.se

Examples of papers to be discussed by study groups:

J. Hartmannis et al. Computing Surveys Symposium on Computational Complexity and the Nature of Computer Science, ACM Computing Surveys, vol 27, no 1, March 1995, pp 5-61.

H. Simon: Artificial Intelligence: an Empirical Science, Artificial Intelligence, vol 77, no 1, Aug 1995, pp 95-127.

H. Simon: "Understanding the natural and the artificial worlds." (This is chapter 01 of The Sciences of the Artificial.)

Paul Graham, "Hackers and Painters" (available here: http://paulgraham.com/hp.html

C.H. Papadimitriou: Database Metatheory: Asking the Big Queries, Proc. PODS'95, San Jose, 1995.

P Lukowicz, E. Heinz, et al.: Experimental Evaluation in Computer Science: A Quantitative Study. Tech Report 17/94, Dept of Informatics, Univ of Karlsruhe, 1994.

P.G.W. Keen: Relevance and Rigour in Information Systems Research: Improving Quality, Confidence, Cohesion and Impact. In Nissen et al., Information Systems Research, North-Holland, 1991.

J.E. Fenstad: Remarks on the Science andTechnology of Language, Reports in LLI no 8, Oslo University, 1995.