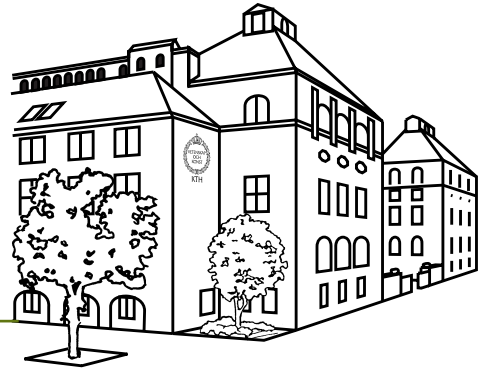


# Numero

Veckobladet om forskning, undervisning och administration  
på Skolan för datavetenskap och kommunikation



## Numero nr 7

1 mars 2007 • Årgång 37

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### Numero är institutionstidningen

på Skolan för datavetenskap och kommunikation vid KTH. Numero utkommer normalt på torsdagsförmiddagar under teminstid.

Manus måste lämnas in före kl.12 på onsdagar. Manus, tips, förslag och andra bidrag till Numero kan lämnas på något av följande sätt:

- via e-post till [numero@nada.kth.se](mailto:numero@nada.kth.se)
- på papper till Nada, Numero, KTH, 100 44 STOCKHOLM (dvs. facket "Numero" bland postfacken på pl 4)

Bidrag för artiklar och notiser bör i största möjliga mån vara färdigformulerade och korrekturlästa.

Varje Numeronummer utkommer i två former:

- På papper för normal postdistribution
- <http://www.csc.kth.se/aktuellt/numero/>

Numeroredaktionen består av Maria Malmqvist. Ansvarig utgivare är Ingrid Melinder. Numeros innehåll uttrycker inte institutionens officiella ståndpunkt annat än då detta anges.

## Docentföreläsning

### Boundary Integral Methods for Multiphase Flow

TeknD Anna-Karin Tornberg  
Må 12/3 15-16 i sal D3.

#### Abstract:

Systems with dynamic geometries present great challenges for computational methods. Examples of such problems include those with time-dependent boundaries that separate regions of different phases or different materials, such as immiscible multiphase flows and flows with immersed elastic or solid particles.

For problems where inertia is negligible, which is often the case for example for fluid mechanics on a small scale - so called microfluidics, the Stokes partial differential equations governing the dynamics can be reformulated as boundary integral equations.

In this lecture, we discuss the concept of boundary integral equations, and some properties of numerical methods built upon these. Results are presented for flows with immersed solid and elastic particles and fibers as well as for locomoting micro-organisms.

### Docentföreläsning

### Compositional Verification of Interaction Behaviour or: If I know the Parts, Do I know the Whole?

Dilian Gurov, CSC/Teorigruppen

Friday, 16 March 2007, 15:15-16:00 in room E2

#### Abstract

When designing a system, its correctness is a major concern. A high degree of confidence in a system is obtained if we can formally establish that its behaviour is correct in some precise mathematical sense. In this talk I will summarize the main approaches, achievements and own my contributions in the area of proving systems correct. Special emphasis will be given on the interaction behaviour of systems with dynamically changing architecture.

## Projektverktyg för forskning

Erfarenhet från samarbete med över 5000 professionella projektarbetare under flera år visar att det ofta är möjligt att frigöra tid och öka effektiviteten i alla delar av forskningsprojekten. I

fortsättning på nästa sida...

samarbete med enheten för forskningsfinansiering vid KTH, KTH Grants Office, <http://www.kth.se/internt/forskning/> håller företagen Designtech och Sogeti Sverige ett seminarium där man presenterar exempel på hur verktyget ProjectCoordinator® kan hjälpa dig med projektledning, dokumenthantering och webbpublicering i dina EU-projekt och andra typer av samverkan i forskningsprojekt.

Seminarier, som är gratis, kommer att hållas på KTH onsdagen den 7 mars 2007 kl. 09.00 - 11.00. Lokal meddelas vid anmälan som ska ske till Anita Elksne, [aelksne@kth.se](mailto:aelksne@kth.se) tel. 790 8796.

Seminarieledare är PhD. Patrik Svanerudh, Vice VD, Designtech samt en representant från Sogeti Sverige

Ett demonstrationsexempel presenteras från en avdelning inom Fysiska institutionen vid Uppsala universitet där ProjectCoordinator® används för att hantera forskningsprojekt och hemsida. Ett annat visar hur ett EU-projekt inom 6:e ramprogrammet med ca 35 organisationer från 12 olika länder kan drivas effektivt med hjälp av ProjectCoordinator®.

ProjectCoordinator® kan:

- hantera dokument i projekten endast med hjälp av webbläsaren.
- planera, budgetera och följa upp projekten.
- skapa en hemsida för projekten för att snabbt kunna sprida information, t.ex. forskningsresultat, till omvärlden och alla projektdeltagare.

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## Utllysningar

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### Nordic Master

Nordiska Ministerrådet utlyser utvecklingsmedel för att skapa Nordic Master

Nordiska Ministerrådet tar nu initiativ till gemensamma nordiska mastersprogram. Lärosäten i de nordiska länderna uppmanas att bilda konsortier och inkomma med förslag om samarbete mellan minst tre lärosäten i minst tre länder. Tanken är att man ska kunna åstadkomma gemensamma mastersprogram som varje land för sig inte kan erbjuda. Initiativet har starkt stöd och förankring hos samtliga nordiska utbildningsministrar. Syftet är bl.a. att locka nordiska studenter att stanna i Norden och studenter från icke-nordiska länder att komma till nordiska lärosäten.

[http://www.norden.org/hogreutbildning/Nordic\\_Master\\_Programme/sk/index.asp](http://www.norden.org/hogreutbildning/Nordic_Master_Programme/sk/index.asp)

<http://www.norden.org/webb/news/news.asp?id=6747&lang=1>

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## Utllysning VR

Sök bidrag till samarbetsprojekt, industri-akademi, se [www.vr.se/knt](http://www.vr.se/knt), sista ansökningsdag 26 april

*Birgitta Eriksson  
Kanslichef  
Naturvetenskapliga fakultetskansliet  
Stockholms universitet*

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## Seminarium

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Seminar at Speech, Music and Hearing:  
**Människolik yttrandegenerering i dialogsystem**

Anna Hjalmarsson

Friday March 2, 15:15 - 17:00,  
The seminar is held in Fantum.

Abstract:

A natural part of human conversation is to adapt what we say and how we say it depending on our conversational partners and the dialogue context. This includes syntactic, semantic and lexical variation. For machines to be perceived as natural conversational partners the system output needs to be coherent with the current state of the dialogue. The research area of Natural Language Generation (NLG) has mainly been concerned with the generation of coherent text and monologues rather than the generation of utterances in dialogue. Generation in dialogue systems has been regarded as fairly non-problematic and simple, non-flexible generation methods such as "canned" speech or templates have been used. These methods work well for task-oriented systems operating within limited domains. However, to produce the kind of spontaneous speech which characterizes human-human interaction the system needs to master a number of different capabilities. This includes determining if the system has elicited adequate information from the user, contextual understanding, responsive interaction and human-like grounding behaviour. To generate this latter type of utterances in dialogue systems we need to know when and how these are used in conversation between humans. I suggest a method which may teach us how to control these parameters. By synthesizing and replacing one of the parties in a recording of a human-human dialogue, I have simulated a dialogue system which behaves very much like a human would. In my talk I will discuss issues related to human-like utterance generation and present results from an experiment where a system with human-like behaviour was simulated. The results support that the system version based on a human speaker was perceived as more human-like, polite and intelligent compared to a system version with more traditional behaviour.

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Seminar at Speech, Music and Hearing:  
**The current music acoustics scene in Brazil**

Leonardo Fuks, a multi-instrumentalist and acoustics professor at University of Brazil -UFRJ

Tuesday March 6, 15:15 - 17:00  
The seminar is held in Fantum.

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Kaspersky besöker Campus IT-universitetet:  
**Demands on ICT security today and five years ahead**

Tid 19 mars kl 16-18  
Aulan, Campus IT-universitetet, Isafjordsgatan 39, Kista

En av de viktigaste forskarna inom IT-säkerhetsområdet - Eugene Kaspersky - är på genomresa i Sverige den 19 mars. Han kommer då att föreläsa på vårt Campus.

Föreläsningen är öppen även för studenter på andra utbildningar inom KTH och SU.

Lite fakta om Eugene Kaspersky:  
Head of Research & Development. Born in Novorossiysk, Russia, Eugene graduated from the Institute of Cryptography, Telecommunications and Computer Science and worked at a multi-disciplinary scientific research institute until 1991. He began studying computer viruses in 1989, when the Cascade virus was detected on his computer.

From 1991 to 1997 Eugene worked at the KAMI Information Technologies Center where he developed the AVP antivirus project with a group of associates (AVP was renamed Kaspersky Anti-Virus in November 2000). Eugene Kaspersky became a co-founder of Kaspersky Lab in 1997.

Today, Eugene Kaspersky is one of the world's leading experts in the information security field. He has written a large number of articles and reviews related to computer virology and speaks regularly at specialized seminars and conferences all over the world.

Aritklar från idg.se:  
<http://sakerhet.idg.se/2.1070/1.94581>  
<http://computersweden.idg.se/2.139/1.94607>

Intervju  
[http://www.gcn.com/print/25\\_8/40376-1.html](http://www.gcn.com/print/25_8/40376-1.html)

*Jannecke Schulman*

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Välkommen till seminarium i serien  
KOMMUNIKATION: KULTUR, TEKNOLOGI, VETENSKAP  
Temat för VT 2007 är "spel som medium och kultur"

**Games and User-Generated Media**

Marko Turpeinen, KTH/Medieteknik

Torsdagen den 1 mars 2007, kl. 14-16.  
seminarium 1537, Lindstedtsvägen 3, plan 5, KTH CSC

Abstract:

Recent trends in PC gaming show that the role of community building around a game product is often crucial to achieve commercial success.

People invest their time and resources to master a game, to learn to know other gamers, and in many cases also to change and enhance the games themselves. Many computer game developers have already realised that allowing gamers to make expansions and modifications (i.e. mods) to existing games is a good model for building community amongst gamers and thus increasing customer loyalty. Also, it is clear that these communities are not only consisting of "hackers" and "hard-core gamers". Many gamers are willing to take the role of a "playmaker" in a game-related content motivated by new abilities to create fun gaming experiences for others. Collaboration happens in many forms of design, storytelling, development, coding, and socializing.

While community-created content is increasing in quality and there is a growing public interest towards this area, several issues remain unanswered regarding this form of content production. There are legal grey areas regarding licensing, lack of well-proven business models, and the general fact that community-created content could prove disruptive to the traditional owners of media products.

Textunderlag:

Benkler, Yochai (2006). The Wealth of Networks, Chapter 4: "The Economics of Social Production", <http://www.congo-education.net/wealth-of-networks/ch-04.htm>

Jenkins, Henry (2006). Convergence Culture, New York University Press, Chapter 4: "Quentin Tarantino's Star Wars? Grassroots Creativity Meets the Media Industry" (uppkopierade exemplar kommer att utdelas i samband med K-seminariet den 26 feb)

Salovaara et al. (2005). Playmakers in multiplayer game communities: their importance and motivations for participation, Proceedings of the 2005 ACM SIGCHI International Conference on Advances in computer entertainment technology, Valencia, Spain, <http://www.hiit.fi/~asalovaa/articles/salovaara-et-al-ace2005-p334.pdf>

*Välkomna!  
Daniel Pargman*

Seminar at Speech, Music and Hearing:

## **Sensors at Medialogy, Aalborg University Copenhagen**

Smilen Dimitrov, Aalborg University Copenhagen

Wednesday March 7, 15:15 - 17:00

The seminar is held in Fantum.

### Abstract

A short introduction of the Medialogy group at Aalborg University Copenhagen. Presentation of the 'Sensor technology' course at Aalborg University, and of some projects that make use of sensors:

- Inexpensive wireless DAQ interface
- Enhancement of Motion of Users in Virtual Environments
- Physmism – interface for physically modelled sound synthesis

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Monday March 5, 13:15, room 1537:

## **Computational Aspects of Random Boolean Networks**

Elena Dubrova, KTH ICT

Research on networks becomes essential to all branches of sciences as we struggle to interpret the data coming from neurobiology, genomics, economics, ecology, and the Internet. Random Boolean Networks (RBNs) were introduced by Kaufmann in 1969 in the context of gene expression and fitness landscapes. They were applied to the problems of cell differentiation, immune response, evolution, and neural networks. They have also attracted the interest of physicists due to their analogy with the disordered systems studied in statistical mechanics, such as the mean field spin glass. An RBN is a synchronous Boolean automaton. Each vertex has  $k$  predecessors, selected at random, and an associated Boolean function of  $k$  variables. Kauffman has shown that it is possible to tune the parameters of an RBN so that the network exhibits self-organized critical behavior ensuring both stability and evolutionary improvements. Statistical features of self-organized RBNs match the characteristics of living cells. This talk focuses on computational aspects of RBNs. First, we give an introduction to random Boolean networks and show how they can be used for modeling of gene regulatory networks of living cells. Then, we describe three basic steps of the analysis of dynamical behavior of RBNs: redundancy removal, partitioning, and computation of attractors. Finally, we discuss open problems and outline perspectives of RBNs.

Invitation:

## **Demo of Physical Computing (2D1400) interactive installations**

March 6th 15-17,

The demonstration will take place on CID Torget Lindstedtsv 5, pl 6

We are happy to announce the demonstration of the student work in the 2D1400 course, which is about to be renamed into "Physical Interaction Design".

The brief of the design/implementation task that the students have worked with for the past weeks is mainly:

"installations should be interactive and meaningful and, either useful or entertaining to their users"

The 19 D, Media and Konstfack student participants will present 4-5 installations.

Most welcome!

*Cristian and Yngve*

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## **Exjobb**

### **Presentation av exjobb i datalogi och biomedicinsk teknik.**

Tisdagen den 6 mars 2007 kl 15.15 i rum 4523

Haile, Mulugeta

#### **Analysis of EEG Signals during Language Tasks.**

Ämne: Datalogi. Program: Matematisk-datalogisk linje, SU

Uppdragsgivare: CSC CBN

Handledare: Jeanette Hellgren Kotaleski och  
examinator: Anders Lansner

Opponent: Tsegereda Gebrehiwet

Leander, Torsten

#### **Force Directed Clustering as a means to extract dependencies in data.**

Ämne: Datalogi. Program: F

Uppdragsgivare: CSC

Handledare och examinator: Anders Lansner

Gebrehiwet, Tsegereda

#### **Optimizing radio performance tests for a GSM base station.**

Ämne: Datalogi. Program: Matematisk-datalogisk linje, SU

Uppdragsgivare: Ericsson

Handledare: Henrik Eriksson och examinator: Lars Kjell Dahl

Opponent: Mulugeta Haile

Seminarier leds av Anders Lansner

X-job seminar at Speech, Music and Hearing:  
**Arraymikrofon och talaridentifiering**  
Jonas Nahlin

Opponent: Tommie Gannert

15:15 - 17:00  
Friday March 9, 2007

The seminar is held in Fantum.

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## Jobb

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Nordic-Math-Job number: SE-0753  
University: Lund University  
Department: Mathematics NF  
Position: PhD studentship in Mathematics (Lie algebras, vertex operator algebras and their representations)  
Deadline: 21 March 2007  
Contacts: Arne Meurman, ++46-(0)46-2228545,  
[Arne.Meurman@math.lu.se](mailto:Arne.Meurman@math.lu.se)  
Web-info: <http://www3.lu.se/info/lediga/admin/document/PA%202007-761.pdf>

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## Smått & Gott

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**Ta en paus! Häng med på Qi-gong**  
tisdagar och fredagar

Ett pass tar ca 20 minuter och gör gott för axlar och rygg när du sitter mycket framför datorn. Kom som du är, ingen föranmälan, inget ombyte behövs.

Qi-gong de närmaste veckorna:

Vecka 9	2 mars kl 14.30 rum 4523
Vecka 10	6 mars kl 11.30 rum 4523
	9 mars kl 14.30 rum 4523
Vecka 11	16 mars kl 14.30 rum 4523

För allas trevnad och upplevelse - Var i tid, stäng av din telefon.

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## LUNCHKONSERTER PÅ KTH

Onsdag 7 mars kl. 12.10 - 12.50,  
Sing-Sing, Lindstedtsvägen 30  
De Tre Klaviaturerna: Eleverna Daniel Hormazabal Cortés, David Huang, Tom Perski från Södra Latin framför musik av Chopin, Debussy, Haydn, de Frumerie och Prokofjev.

Onsdag 14 mars kl. 12.10 - 12.50,  
Sing-Sing, Lindstedtsvägen 30  
Kongliga Teknologkören on the stage Dirigent Fredrik Winberg

Avnjut gärna din lunch vid en härlig musikstund!

*Director Musices Gunnar Julin*

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## Seminarielänkar

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### AlbaNova

<http://www.albanova.se/aktuellt/>

**Avdelningen för teknik- och vetenskapshistoria**  
[www.teknikhistoria.se](http://www.teknikhistoria.se)

### Bråket

<http://www.math.kth.se/braaket.html>

**INSTITUT MITTAG-LEFFLER SEMINARS**  
[www.ml.kva.se](http://www.ml.kva.se)

### Kommunikationsseminarium:

<http://w1.nada.kth.se/media/Research/k-sem/k-sem-aktuellt/>

### KTH – Computational Science and Engineering Centre

<http://www.kcse.kth.se/seminars.html>

### KTH Matematik

<http://www.math.kth.se/optsys seminar/>

**S3** <http://www.s3.kth.se/>

### SICS

<http://www.sics.se/research/seminars.php>

### Stacken

<http://www.stacken.kth.se/kalender/>

### Stockholm Bioinformatics Center and Dept Num Analysis and Comp Science

<http://www.sbc.su.se/seminars/>

### TMH, Tal, musik och hörsel

<http://www.speech.kth.se/seminars/>

### Wireless@kth

<http://www.wireless.kth.se>

## Kalendarium 2007

### **1 mars 2007, kl. 14-16.**

Games and User-Generated Media. Marko Turpeinen, KTH/Medieteknik, seminarierum 1537, Lindstedtsvägen 3, plan 5, KTH CSC

### **2 mars, 15:15 - 17:00**, Seminar at Speech, Music and Hearing:

Människolik yttrandegenerering i dialogsystem. Anna Hjalmarsson. The seminar is held in Fantum.

### **5 mars, 13:15,**

Computational Aspects of Random Boolean Networks. Elena Dubrova, KTH ICT, room 1537

### **6 mars 2007 kl 15.15.** Presentation av exjobb i datalogi och biomedicinsk teknik.

Haile, Mulugeta. Analysis of EEG Signals during Language Tasks.

Leander, Torsten. Force Directed Clustering as a means to extract dependencies in data.

Gebrehiwet, Tsegereda. Optimizing radio performance tests for a GSM base station. i rum 4523

### **6 mars, 15:15 - 17:00.** Seminar at Speech, Music and Hearing:

The current music acoustics scene in Brazil. The seminar is held in Fantum.

### **7 mars 2007 kl. 09.00 - 11.00** Seminarium

Projektverktyg för forskning. Seminariet, kommer att hållas på KTH onsdagen den Lokal meddelas vid anmälan som ska ske till Anita Elksne, aelksne@kth.se tel. 790 8796.

### **7 mars kl. 12.10 - 12.50** Vårens lunchkonserter på KTH

De Tre Klaviaturerna: Eleverna Daniel Hormazabal Cortés, David Huang, Tom Perski från Södra Latin framför musik av Chopin, Debussy, Haydn, de Frumerie och Prokofjev. Sing-Sing, Lindstedtsvägen 30

### **7 mars, 15:15 - 17:00** Seminar at Speech, Music and Hearing:

Sensors at Medialogy, Aalborg University Copenhagen, Smilen Dimitrov, Aalborg University Copenhagen  
The seminar is held in Fantum.

### **9 mars, 15:15 - 17:00** X-job seminar at Speech, Music and Hearing:

Arraymikrofon och talaridentifiering. Jonas Nahlin. The seminar is held in Fantum.

### **12 mars, 15-16** Docentföreläsning

Boundary Integral Methods for Multiphase Flow. TeknD Anna-Karin Tornberg i sal D3.

### **16 mars kl 15:15-16:00** Docentföreläsning

Compositional Verification of Interaction Behaviour or: If I know the Parts, Do I know the Whole?

Dilian Gurov, CSC/Teorigruppen. Place: room E2

### **19 Mars, 15:15** Linneaus Center ACCESS Distinguished Lecture Series

The Case for Many Antennas at the Base Station, Dr Tom Marzetta. Salongen (at the Library), Osquars backe 31, KTH

### **19 mars kl 16-18**

Demands on ICT security today and five years ahead. Eugene Kaspersky. Aulan, Campus IT-universitetet, Isafjordsgatan 39, Kista

### **23 mars kl 10.00** Licentiatseminarium

Daniel Aarno, KTH, Datalogi. Intention Recognition in Human Machine Collaborative Systems

Sal D31, Lindstedsvägen 17

### **2 - 4 maj 2007** kurs

kursen Handledning och Ledarskap vid Naturvetenskapliga fakulteten vid Stockholms universitet

Plats: Tammsviks kursgård (internat)

### **14-15 maj** CSC:s lärarinternat

Boka redan nu in CSC:s lärarinternat den 14-15 maj. Vi startrar och slutar med lunch ca kl 12 och kommer att vara någonstans i Storstockholmsområdet..

### **30 maj - 1 juni 2007** Fonetikmöte på TMH

### **20-31 augusti, 2007.** PDC Summer School

Introduction to High-Performance Computing – PDC Summer School, KTH, Stockholm, Sweden,