CSC Information meeting
April 12th, 2016
New employees

Welcome!!!
CST
Parul Tewatia, Postdoctor

MID
Olga Viberg, Postdoctor

CVAP
Jiexiong Tang, Ph.D Student

PDC
Szilard Pall, Research Engineer

TMH
Zofia Malisz, Postdoctor
Eva Szekely, Postdoctor
New Professor of Computer Science
WASP – Wallenberg Autonomous Systems Program will advertise a well funded professorship in Software technology.

Will be advertised internationally soon.

Please help recruiting world leading researchers to the school!
Centrally funded sabbaticals

KTH will announce the opportunity to fund centrally supported sabbaticals. 50% funding from KTH centrally, 50% from the department.

Application deadline May 16.
Ingela Hedberg, HR-administrator
Stina Kahlin, Programme officer
Anna Volkerts, Communications Officer, CESC
Information and reminders from HR

Martin Fält
Diversity and equality

Local diversity projects, 3 out of 4 projects were approved:

- “Normkritisk grund inom utbildning”
- “Visualizing career paths for everyone” + “Film, undervisning på CSC”
Employee survey

KTH 70% participation rate

CSC 73% participation rate

Thanks to all of you who participated!

As soon as we get the result, we will get back to you and the management team.
They are out to steal OUR trophy!

Step competition 15 April – 29 May

Last year we put ITM in the rear view mirror and won the step competition in grand style!

This year they have gotten reinforcement from the university administration and ICT.

Help us save our dignity and sign up for this year's step competition before the 15th of April.

You find more information on CSC intra.
Room bookings and interactive displays

Daniel Vare
Room bookings

MRBS will be closed down, we are switching to Exchange

Change date 1/7-2016

New booking system available from 18/4 to book events occurring after 1/7-2016
Meeting room displays

- Book spontaneous meetings directly at the display
- At the meeting room you can see room status and upcoming events
- Extend your meeting directly at the screen
Interactive displays

- Available at the main entrances at each building
- Location specific and global information
- Replace inaccurate personnel lists
- Assist visitors etc. to find their way
- Enable error reporting and contact with service center
Poster printer

- A0 printer, Max size 1060x30000mm
- LV 3 Floor 4, room 1426
KTH is the most “Googled” university both by people in Sweden and abroad in the past year according to Google.

Svenska Dagbladet has asked Google to find out which Swedish Universities that are the most “Googled” online in the past year.

The newspaper reported that Royal Institute of Technology (KTH) tops the list!

To the Article: http://www.dn.se/ekonomi/kth-popularaste-skolan-pa-google/
From 2014/2015 the KTH president has decided to introduce a so-called Annual bibliometric monitoring, ABM: Decision V2014-0934.

ABM of 2016 will be published in the beginning of October.

Publications that are previously not included in DiVA may be registered at the latest April 30, 2016 to be included in ABM October 2016.

For the October version of ABM, publications with publishing year 2009-2019 will be included. In addition granted patents will be included.
List of Publications
To check the current list of publications in DiVA, go to the profile page: www.kth.se/social/home/profile/. Click the edit button for publications.

If something is missing, and completing your publications is necessary information about this can be found here: https://www.kth.se/kthb/publicering/kths-publikationsdat/hantera-publikationer-i-diva-1.606602

Instructions to view / edit / activate publication list: https://www.kth.se/kthb/publicering/vagledning/publikationslistor-pa-profilsidor-1.611017

To see ABM 2015 https://intra.kth.se/bibliometri/public/start
Questions can be sent to pi@ece.kth.se
New Ladok version at KTH
Background

- Sweden's universities decided to develop a new version of Ladok, *Ladok3*.
- At KTH, the system is planned to be fully operational 2017-12-31.
The status right now at CSC

• A proper analysis of the consequences is ongoing, and how Rapp will be handled in relation to this new system.

• A working group consisting of representatives of teachers, education office and students who is assigned to prepare an action plan required for the introduction of Ladok3.
Dean´s decision

"För att införandet av det nya Ladok3-systemet ska bli så bra som möjligt lämnar Skolchef till GA och stabschef att förbereda skolans undervisande och administrerande personal på förändringen.

För att möjliggöra detta ges en arbetsgrupp, bestående av Patrik Gärdenäs (chef utbildningskansliet), Per Austrin (bitr GA och lärarrepresentant) samt Eric Lewerentz (studeranderepresentant), i uppdrag att analysera konsekvenserna av övergången till Ladok3 och föreslå nya rutiner för studierapportering.

Analysen ska läggas fram för LG i juni 2016. En slutgiltig plan för anpassning till Ladok3, inklusive nya rutiner, lämnas senast i december 2016, efter att systemet prövats i en större kurs under höstterminen 2016."
Latest information on the process?

http://intra.csc.kth.se/en/aktuellt/nyhet/ladok-3-pa-csc
GIANTS

Johanna Järnfeldt
Event – The Future Needs Giants March 12

- Reaktorhallen
- 100 seats – 60 participants
- 7 Talks + 2 workshops
- 100 guests – 60 participants

- Moderators:
  Marie Alexander CSC-student and Adam Knutsson Alumni Electro
Evaluation

• 51 of 60 answered, 32 from Stockholm 19 from rest of Sweden
  Interested in KTH before event = 31
  A little interested, not at all or neutral = 20
  The 20 who were a little interested or not interested at all ->
  after the event: 8 more interested and 12 still neutral.

• Over all very positive feedback from audience.
• Next year – Giants 3.0 join us!
• Film www.kth.se/giants
Do you want to update your profile picture or are you missing one to your KTH profile?

Now you have the chance!

Johanna Järnfeldt along with photographer are at your service in direct connection to this meeting.
EU ECSEL SafeCOP Project
Safe Cooperating Cyber-Physical Systems using Wireless Communication

29 Partners, 7 countries, 7.6 MEuro
17 Nordic Partners (SE, NO, DK, FI)
Ranked #1 out of 51 applications

Karl Meinke
Safety and Security of Autonomous Systems

Within a decade, 1 in 8 cars sold around the world will have autonomous features, making them a $42 billion-a-year market.

“There is no question that someone’s going to die in this technology. The question is when and what can we do to minimize that.”

Prof. Mary Louise Cummings
Duke University Robotics Dept.
US Senate Hearing, March 15, 2016
Swedish Partners and Case Studies

SE Partners: Alten AB (co-ord), MDH, KTH, QamCom AB, Safety Integrity AB, SICS Västerås.

5 Use cases in (semi-)autonomous systems-of-systems

- Autonomous Vehicle (Control Loss Warning) (KTH)
- Vehicle and Roadside Unit Interaction
- V2I Traffic Management
- Co-operative Autonomous Boat Platoons
- Autonomous Hospital Beds

KTH contribution: predictive run-time monitoring to mitigate the handover problem (*a last line of defence!*)
Small Visionary Projects (SVP) Presentations
Muscle activation patterns in speech: Minimization of energy or variability?

Arvind Kumar
Olov Engwall
Saeed Dabbaghchian
Muscle activation patterns in speech: Minimization of energy or variability?

Question:
Multiple muscle activation patterns (MAPs) can generate similar sounds. How does the brain learn/choose among competing MAPs to produce a specific sound?

Possible strategies:
• MAPs with minimum energy are learned
• MAPs with minimum trial-by-trial variability are learned
• both

Approach:
• Find multi MAPs for the same sound using ArtiSynth
• Estimate the energy associated with each MAP
• Introduce noise in the MAPs and measure the acoustic variability
Theoretically principled architectures for deep networks: Understanding ConvNets and making them provably invariant

Atsuto Maki and Tony Lindeberg
Theoretically principled architectures for deep networks: Understanding ConvNets and making them provably invariant

Topic: To design convolutional networks for visual tasks incorporating theory of visual receptive fields.

Scope: Aim at higher robustness under natural image transformations and lower computational cost for training, with lower amount of training data.

Members:
Atsuto Maki (CVAP) and Tony Lindeberg (CST)
PlaTE: Multi-Robot Planning under Temporal-Epistemic Goals

Dilian Gurov
PlaTE: Multi-Robot Planning under Temporal-Epistemic Goals

Who:
- Dilian Gurov, Mika Cohen (TCS), Jana Tumova (CVAP), Johan Boye (TMH)

What:
- Synthesis of single-robot plans from common robot-team mission

How:
- Specify robot behaviour and knowledge in logic
- Decompose mission formula + synthesize plans
Uncovering the Differences between Natural and Synthesized Voice Sounds

Jonas Beskow
Uncovering the Differences between Natural and Synthesized Voice Sounds

PIs: Sten Ternström (TMH) & Tino Weinkauf (CST)

What makes recorded voices sound natural?
*Three user studies and multidimensional visualization to find the key differences between natural and synthesized sounds.*

*Final goal: re-activate model-based voice synthesis to get very small memory and computation footprint for wearables and other devices.*

![Diagram showing the process from glottal wave to radiated sound wave](image)
Brain-like approaches to learning spectro-temporal representations of sounds in speech recognition and music perception

Pawel Herman (CST), Giampiero Salvi (TMH), Anders Friberg (TMH)
Learning **brain (cortical)-like** sparse **representations** of either

1) low-level cochlear signals or

2) preprocessed spectral features

**Scientific value:**

- hypotheses about cortical information processing / coding, sensory input representations (time-varying input)
- the effect of input characteristics on discriminatory value of cortical codes
- comparison with deep neural networks

**Applications:**

- automated speech recognition (ASR) systems
- music information retrieval (MIR) problems
Robust non-verbal expression in artificial agents: Identification and modelling of stylized gesture and sound cues

Roberto Bresin, Emma Frid (MID), Petter Ögren (CVAP), Simon Alexandersson (TMH), Alejandro Bonnet (UniArts)
Robust non-verbal expression in artificial agents: Identification and modelling of stylized gesture and sound cues

- How can a machine’s internal state be expressed by gesture and sound?
- How can intentions be communicated as clear as possible with regard to limitations in facial, verbal and body expression of the agent?

MID Roberto Bresin (PI), Emma Frid - CVAP Petter Ögren
TMH Simon Alexanderson - SKH (Uniarts) Alejandro Bonnet
Trust creation in electronic voting: opening the black box

Cristian Bogdan (MID), Douglas Wikström (TCS)
Trust creation in electronic voting: opening the black box
Douglas Wikström, TCS
Cristian Bogdan, MID

Issues illustrated in the figure: dead voters, multiple voting, false certificates, paid votes, etc.

Technology to combat such attacks is very complex

The project aims to find the appropriate metaphors to
• explain this technology to voters, politicians, decision makers
• before, during and after the voting process
What is happening on the KTH level?

Gulan
KTH new rector

Proposal for new rector
To be decided by the government
Tentative starting date, November 2016
CSC development plan 2013-2016

Minor updates for 2017
CSC development plan 2013-2016

During 2013-16 CSC will:

• conduct education, research and innovation at the highest international level,

• build on its truly multidisciplinary research environment to find novel ways of achieving the above,

• recruit the best students, and offer them a modern, stimulating, efficient and relevant education that produces highly employable researchers and professionals,

• strategically plan its research to achieve significant scientific and societal impact, addressing relevant problems that contribute to the development of its research fields, and to society at large,

• increase scientific impact by publishing in the most competitive peer-reviewed journals and at conferences in relevant fields,

• increase citations and visibility through strategic communication by faculty, and active interaction with the society at large,
CSC development plan 2013-2016

During 2013-16 CSC will (cont.):

• **secure** funding from the most **competitive external funding sources** (the European Research Council (ERC), the EU, The Swedish Research Council (VR), Vinnova, the Swedish Foundation for Strategic Research (SSF)),

• increase industrial collaboration with strategic partners,

• continue to develop as an **attractive** research and education environment that manages to **recruit** and retain leading researchers in computer science and communication at all levels,

• work actively to implement the **tenure track** system and establish adequate career paths for faculty,

• work actively towards **increased gender equality** among staff and students,

• **increase international collaboration**, both in education and research, for increased international recognition and greater mobility,

• be a **role model** in the use of **ICT** services and technologies in education, research and administration,

• **increase the mobility** between industry and academia,

• maintain a **support organisation** that is perceived as **excellent** in terms of **efficiency**, by students and staff, with a clear goal of facilitating for all staff to involve themselves more in their core tasks.
CSC development plan 2013-2016

Analysis:
- KTH improves in ranking but looses in citations
- We must be better in recruiting females (students and staff)
- We have too few PhD students
- We need to increase industry participation and funding (industrial PhDs, adjunct professors, projects and contract education)
- We need to digitalize and modernize our education
Some final notes from CSC

Gulan
CSC School Awards 2015, time to nominate!

Send your nomination in the following categories together with category and a brief explanation why you think this person are worthy this honorable price: priskommitte@csc.kth.se

CSC Teacher of the Year

CSC Teacher assistant of the Year

CSC Employee of the Year

CSC Leader of the Year
CSC Open House Event followed by CSC Summer Party 2016

CSC departments will have Open house for all CSC co-workers, June 22nd.

It is a joint arrangement for all employees as a part of the CSC summer party

See what exciting things our departments got in pipeline

Kick off 16:00 -17.30 (dinner at Nalen at 18.00)

Quiz with nice prize for the best team, will be announced during the dinner.

More information will follow shortly in Numera, Intra and at your departments soon!