EECS Staff meeting

14 May 2025

Agenda

Updates from management

- Head of School Ann Lantz on general news about ongoing activities.
- Joakim Lilliesköld
- Henrik Artman
- Lina Bertling Tjernberg
- Gunnar Malm

Wallenberg Scholars

- Dejan Costic - Democratizing AI

PhD Council news

- Jura Miniota - PhD council

Q & A

General news about ongoing activities

Head of School Ann Lantz

Universitetsalliansen Stockholm trio

University Alliance
Stockholm Trio

- Prodecanus Nina Wormbs will arrange a seminar together with the trio on authorship in academic publications
- The trio is the largest university in EU:s has position 1 when it comes to EU-finanances
- Seminar on ”50 minutes with the Bussels office”
- The EU-course will be offered again. Theory at KTH and visit to the Brussels office. Information will be sent out from RSO, sign up for the course in the beginning of the fall (18KTH, 1EECS)

General news about ongoing activities

Campus moves

- COS, EES and SCS are moving in to KTH Campus (Gunnar Malm)
- HR has moved from Malvinas väg 10 to The ground floor at SingSing
- Economy has moved from Malvinas väg 10 to Teknikringen 42

- One surprice.....

Change management

Deputy Head of School Joakim Lilliesköld

New organization 2026

- Suggest structure for organization by September 30, new organization should be in place by the new year 2026
- We aim to take away one level, and make our current division level our department level
- Research and teaching will be managed on the same organizational level
  - Reducing the number of OH financed roles
- We have stared working on our economic distribution models
  - Transparent and predictable are some of the key words
- Risk analysis will be done before summer

Research & Impact

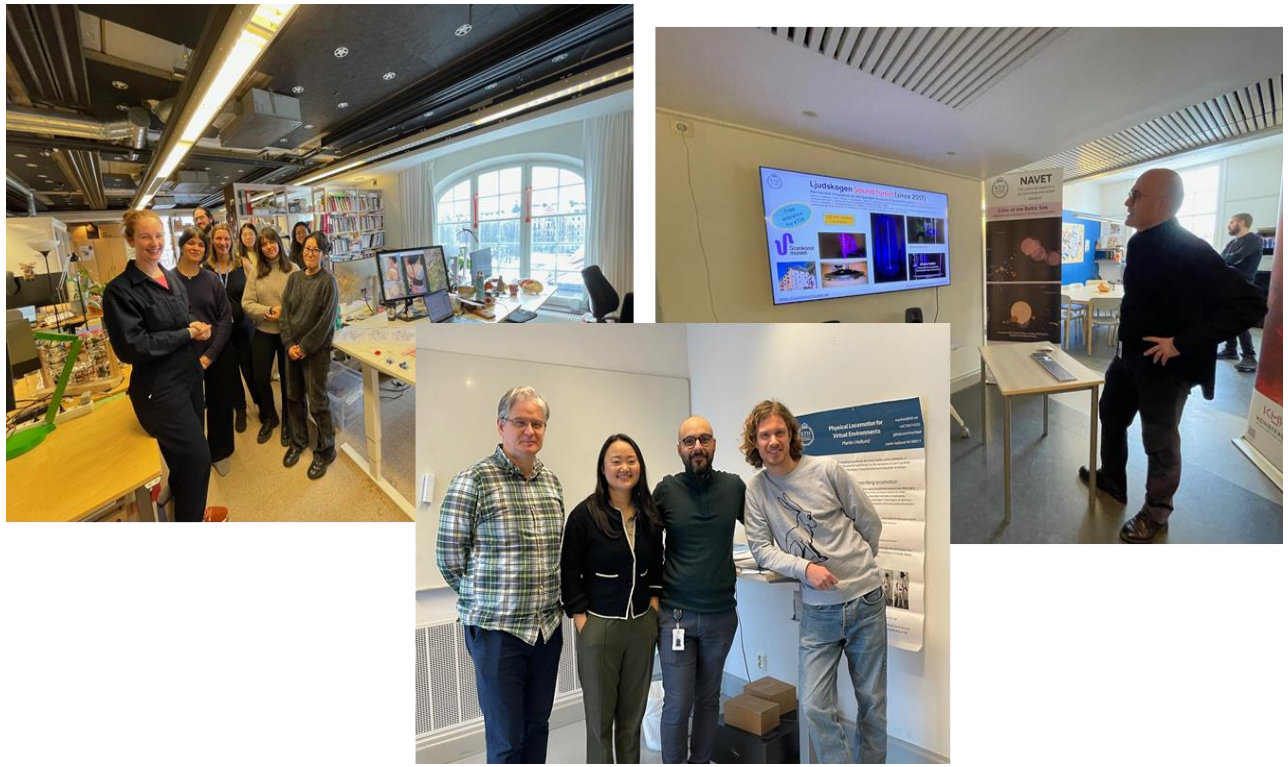
Deputy Head of School Lina Bertling Tjernberg

Division visits from EECS management 2024/2025

- The overall goals are to gain an insight into the ongoing research work at the Division, and to understand the critical strategic questions for the research related to faculty and funding.
- All 15 Divisions at EECS will be visitied (October-August)

- 12 Oct. **Information Science and Engineering (ISE)**
- 28 Jan. **Robotics, Perception and Learning (RPL)**
- 5 Feb. **Software and Computer Systems (SCS)**
- 18 Feb. **Media Technology and Interaction Design (MID)**
- 4 March **Electromagnetic Engineering and Fusion Science (EMF)**
- 12 March **Communication Systems (COS)**
- 18 March **Decision and Control Systems (DCS)**
- 26 March **Electronics and Embedded Systems (EES)**
- 1 April **Micro and Nanosystems (MST)**
- 29 April **Computational Science and Technology (CST)**
- 28 May **Space and Plasma Physics (SPP)**
- 9 June **Speech, Music and Hearing (TMH)**
- 10 June **Network and Systems Engineering (NSE)**
- 20 Aug. **Theoretical Computer Science (TCS)**
- 20 Aug. **Electric Power & Energy Systems (EPE)**

Division visits from EECS management 2024/2025



MID

EMF

Division visits from EECS management 2024/2025

COS

DCS

Division visits from EECS management 2024/2025

EES

MST

CST

Small and Visionary Projects – strategic funding

- Strategic founds from MK will be used total 5 MSEK (one time funding)
- Projects of 500kSEK and total 10 projects will be funded
- Researchers* from at least 2 Divisions at EECS school can apply
- A committee will be reviewing the proposals (Roberto Bresin, Karl Henrik Johansson, Danica Kragic Jensfelt and Lina Bertling Tjernberg (chairperson))
- Two call for projects one spring 25 and one autumn 25
- First call will open shortly with deadline 2 June
- Descisions will be made by 10 June

- More information will be published by communication support.

*not targeted for PhD students but faculty and other researchers

Strategic focus on increased research funding from EU

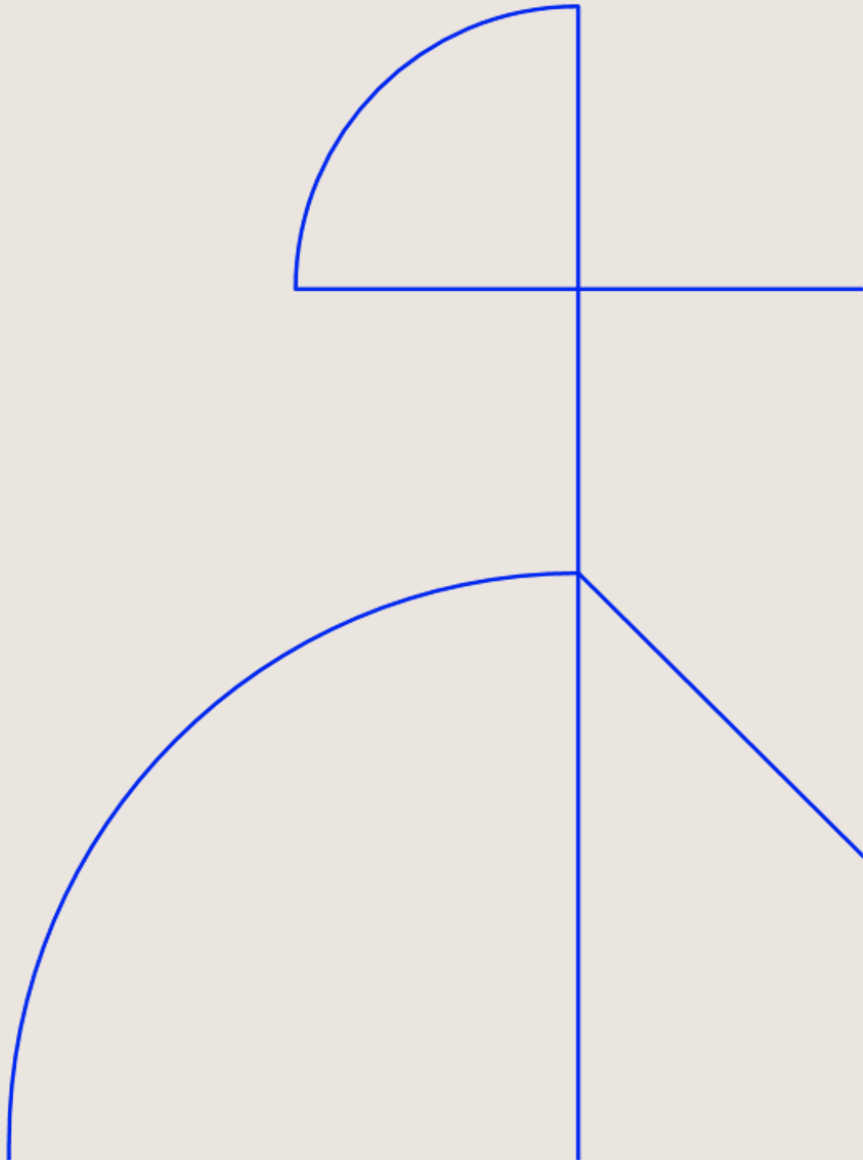
Operational plan 2025-2028

It is strategically vital to increase research cooperation within Europe and join forces. I want to focus on how we can develop opportunities to support research funding from the EU at KTH and in Sweden. Lina Bertling Tjernberg The management on EECS' new operational plan 2025-2028 | EECS internal pages 12 March 2025.

- A special task force will be created at EECS targeting to support increased fudning from the European Research Council (ERC)
- Meeting planned for Monday 26 May, 1030-1130 to start up the work
- Interested to join this task force are welcome to contact linab@kth.se

Future Faculty

Henrik Artman, FFA



Myndighetskapitalsatsning

As formerly announced the School did an administrative capital investment for four assistant professor positions with focus on finding underrepresented gender.

10 positions from 9 divisions were suggested

The faculty board suggested, after voting, to go forward with 4 position, and EECS management agreed.

- COS – Sustainable Satellite Networks
- EES – Electronic System Design
- ISE – Information Science and Engineering
- MST – Micro and Nano Technology for Societal Sustainability

The criteria were:

- Co-funding of 5 millions from the division
- Strong candidates of under-represented gender
- Strategic significance for EECS.
- Teaching needs

The positions will be announced during 2025.

Campus relocation

Gunnar Malm, dep. Head Electronics and
Embedded Systems

Kista move updates

- Construction has now started for new offices and labs at
  - SingSing: Division of Software and Computer Systems (SCS). First floor ready in August. All areas and move in October
  - Q-building: Division of Communication Systems (COS). Whole floor ready in July. Move around mid-August
- GRU: All new and current students at 1st and 2nd level scheduled at main campus in autumn

“Sustainable and Adaptive Inferencing for Democratizing AI”

Dejan Kostic

“DAI” Wallenberg Scholar Grant– 18 MSEK

- Artificial General Intelligence (AGI) is coming?
  - It will become harder for humans to get jobs
  - Already hard for recent college grads in the US to get hired
- Humans will have to maximize their potential
  - Will require personalized AI mentors
- Want ”unlimited ChatGPT” for each child!

Cost of running ChatGPT is high

- 10s to 100s of thousands of GPUs to train a Large Language Model (LLM)
  - xAI: 250 MW --> 1.2 GW AI datacenter being built
  - But training done only once
- LLM inference requires a massive number of scaled dot-products (matrix multiplications underneath)
  - Tens of attention heads, in tens of layers
- Cost of simply running ChatGPT was estimated to be more than $700 000 per day ($0.25B per year) two years ago
  - Probably even higher for models with text-to-image and text-to-video
- Machine learning inferencing is already unsustainable

Current trend for increasing “intelligence” of LLMs

- Pre-training
- Post-training
  - Fine-tuning, distillation, reinforcement learning, etc.
- Test-time compute
  - OpenAI o1/o3/o4-mini, DeepSeek-R1, etc.
  - Already responses take minutes to be generated
- The industry is constantly decreasing the cost of inference,
  - But the LLM use is also increasing!
- Jevon’s paradox
  - The cheaper it is to use some resource, the more it gets used

DAI Project Goal

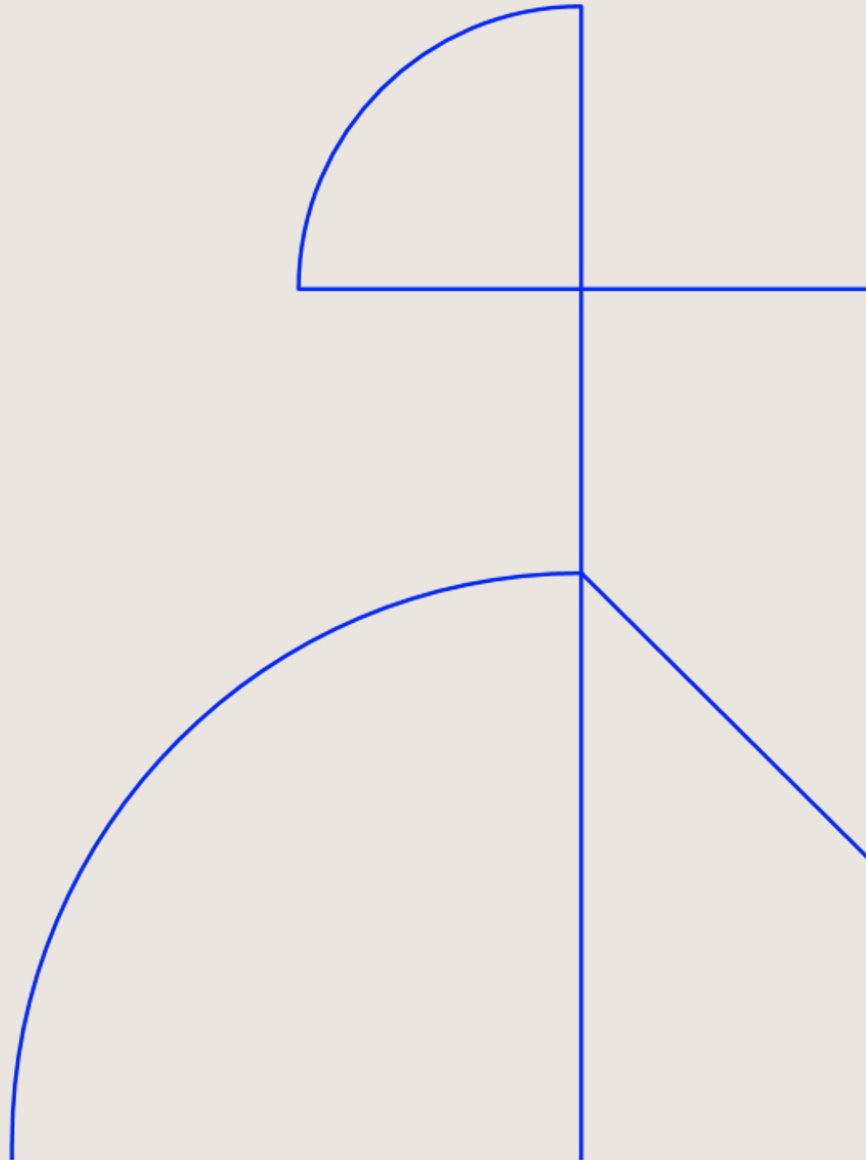
- Fundamentally decrease (by a factor of 10) the power consumption of systems that are used for inferencing when using large language models

- https://www.kth.se/blogs/dai/

New course: Networked Systems for Machine Learning

- IK2221 7.5-credit Master level course
- “This course teaches students the most recent techniques for effectively serving machine learning workloads with datacenters.”
- Would like to have it included as an elective in the
  - Computer Science Master Program
  - Machine Learning Master Program
  - Distributed Systems Master Program
  - Sustainable Technology Master Program
- IK3221 7.5-credit Doctoral version of the course

PhD Council news

Chair Jura Miniota

Questions?