

Nordic IoT News

No. 5-2021

PhD student Hackathon

On 17-18 June, our PhD students organized an on-line Hackathon with the theme "IoT in space and on Mars." The purpose of the hackathon was to bring together the PhD students and Postdocs from the hub to socialize and network. A hackathon is a short event where developers gather together to brainstorm and prototype some new ideas that may solve a certain challenge. Initially created for software development, hackathons now exist for all kinds of innovative or transformative purposes. Following keynotes by domain experts, the participants brainstormed about the challenge of "IoT in space and on Mars".

The Hackathon was introduced by two recognized speakers addressing the constraints arising when working in space:

- Keynote 1: How smart semi-autonomous systems could support future manned missions to Mars
Professor Christer Fuglesang, KTH (Sweden's first astronaut in space)
- Keynote 2: Processor and hardware design for space systems
Dr. Johnny Öberg, KTH



NASA's plan called "Human Exploration of Mars Design Reference Architecture 5.0", which calls for autonomous missions to launch for Mars a few years before the actual manned mission(s) was used to kick-off the Hackathon. The forward-deploy missions need to set up a Mars base and all the (smart) infrastructure, including power generation and manufacturing, to eventually support human astronauts, without relying on Earth mission control for everything due to the time lag involved in interplanetary communications. This setup was distributed to the participants to initiate discussions on ICT/IoT systems for such a case.

The participants were divided into multidisciplinary teams. They spent some hours discussing their ideas, developing concepts and finally presented their results to each other.

Following the Hackathon one of our students said: "It was a great opportunity to meet fellow PhD students from other Nordic universities, have interesting discussions about technology and learn about their research."

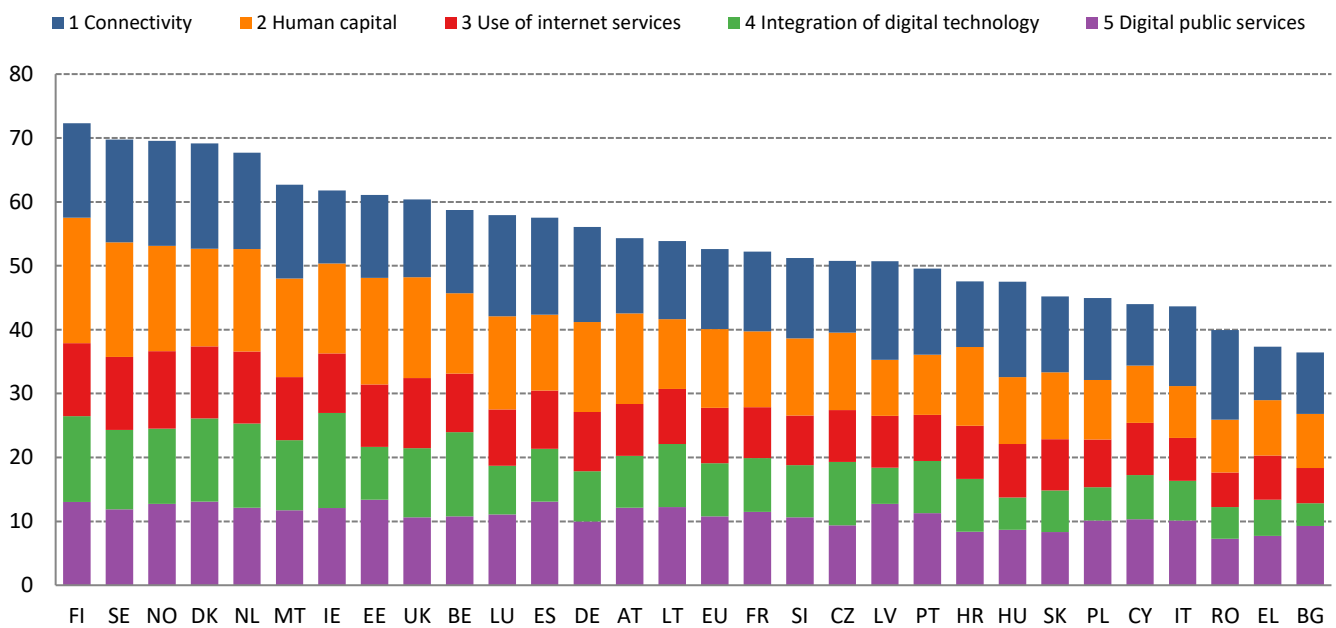
The Hackathon was organized jointly by our two students Jaakko Harjuhahto, Aalto and Niklas Reusch, DTU

NordForsk Review

The Nordic Hub on Industrial IoT just passed the third-year review/assessment at NordForsk. The current funding runs till end 2023. This means that joint activities developed by the Hub are eligible for funding, e.g. promotion of Nordic collaboration in IIoT, pooling of infrastructure, mapping of activities, more effectively project ourselves at EU and global level, develop joint Summer Schools/advanced courses dedicated to PhD and MSc students, and develop a targeted Nordic IoT roadmap.

IoT is a key enabler for the digitalization of the Nordic societies. The Nordic countries top the European Commission's digital index of 2020. Finland is the EU's best-performing country in digitalization, while Sweden ranks second, Norway third and Denmark fourth. Each country is assessed on five dimensions: 1 Connectivity (access to and use of broadband), 2 Human capital (citizens' digital skills/the proportion of ICT specialists among professionals), 3 Use of internet services (citizens' use of the Internet, online activities), 4 Integration of digital technology by businesses (e-commerce, cloud services, big data), 5 Digital public services (eGovernment, e-prescriptions, open data). The index combines 34 indicators and uses a weighting system to rank each country based on its digital performance (see the below figure).

Digital Economy and Society Index (DESI) 2020 ranking



New PhD students associated with the Hub

Three new PhD students have been associated with the Hub. Please welcome:

- Reliable and Trustworthy IoT Networks
Zang Mingyuan, DTU
- Security architecture for low-latency large-scale 5G communication networks
Daniel Alberto Dik Rodriguez, DTU
- System architecture for future mobile networks
Aleksander Pruski, DTU

In total we now have 54 PhD students affiliated to the Hub meaning that their Hub activities are eligible for funding. Please visit <http://www.nordic-iot.org/doctoral-school/list-of-affiliated-phds/> for a complete list of students.



Aalto University, FI
Lund University, SE
Norwegian University of Science and Technology, NO
Royal Institute of Technology, SE
Technical University of Denmark, DK

