



**TAL  
TECH**

# **TALTECH REPOSITOORIUM; ETAIS JA TEADUSARVUTUSED**

Lauri Anton, Rainer Liis  
Teadusarvutuste keskus, IT Kolledž, IT teaduskond  
Tallinna Tehnikaülikool

22.05.2025

# TALTECH TEADUSARVUTUSTE KESKUS

Põhieesmärgiks teaduse IT-vajaduste tagamine

- 7 töötajat + 2 praktikanti
- u 1700 protsessorituuma
- 20 GPU-d
- 1.6 PB salvestusruumi

Põhiteenused:

- Arvutusklaster
- GPU serverid
- Salvestusruum
- Pilveteenus (OpenStack & CEPH)
- Varundus
- Repositoorium [data.taltech.ee](http://data.taltech.ee)
- Ligipääs LUMI superarvutile



# OPENONDEMAND

- OpenOnDemand - veebipõhine graafiline liides



Pinned Apps A featured subset of all available apps

System Status  
System Apps

TalTech HPC Desktop  
System Apps

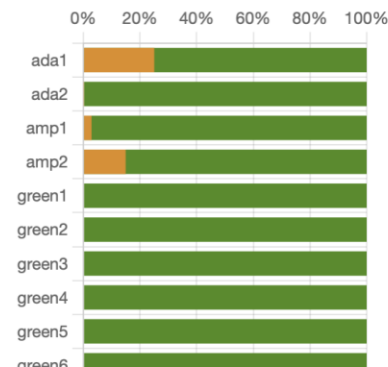
Job Composer  
System Apps

Home Directory  
System Apps

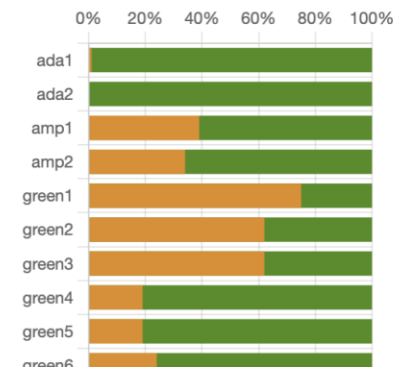
Jupyter Lab  
System Apps

Visual Studio Code  
System Apps

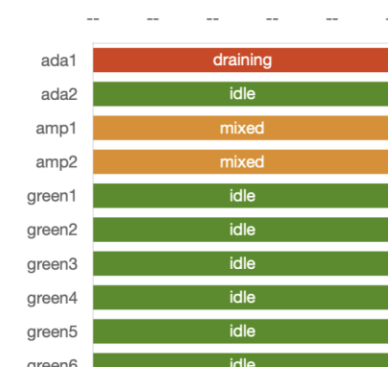
CPU load



RAM usage



Node status



# EESTI TEADUSARVUTUSTE INFRASTRUKTUUR

## Konsortsium

- **Tartu Ülikool – juhtpartner**
- **Tallinna Tehnikaülikool**
- **KBFI**



Estonian Scientific  
Computing Infrastructure

- Arendame ühiselt teadusarvutusteks vajalikku infrastruktuuri
- Oleme riigile partneriks arvutus- ja andmetaristu tagamisel
- Vahendame LUMI superarvutit Eesti teadlastele ja ettevõtetele

<https://etais.ee/about/>

# LUMI SUPERARVUTI

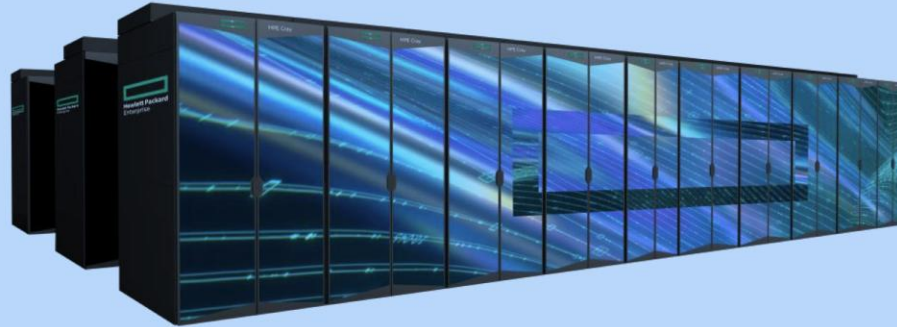


<https://lumi-supercomputer.eu/lumi-europes-most-powerful-supercomputer-is-solving-global-challenges-and-promoting-a-green-transformation/>

# LUMI SUPERCOMPUTER

**L U M I**

## LUMI: one of the fastest supercomputers in the world



- LUMI will be an **HPE Cray EX** supercomputer manufactured by **Hewlett Packard Enterprise**
- Peak performance over **550 petaflop/s** makes the system one of the world's fastest
  - Fastest today is Fugaku supercomputer in Japan with 513 petaflop/s, second fastest Summit in USA with 200 petaflop/s)

1 system

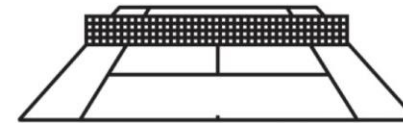
**550**  
**Pflop/s**

Peak Performance

Computing power  
equivalent to

**1 500 000**

Modern laptop computers



Size of a tennis court

Modern platform for

**High-performance  
computing,  
Artificial intelligence,  
Data analytics**

Based on GPU technology

# REPOSITOORIUM DATA.TALTECH.EE

- Teadustöö raames ja artiklite kirjutamisel kasutatud andmete säilitamiseks
- Avatud teaduse ja FAIR printsiipide levitamiseks
- Andmehaldusplaanides lubatu täitmiseks
  
- Peakasutaja on TalTech raamatukogu
- Tehnilist teostust pakub arvutuskeskus
  
- Lubadus hoida andmeid vähemalt 10 a.
- Üleslaadimise suurus on kuni 10GB

# INVENIO RDM TARKVARA

- Arendatud CERNis
  - üks suurimaid kasutajaid on Zenodo
- Python rakendus
- Mikroteenuste arhitektuur + REST API
- Toetub vabavarale
  - PostgreSQL
  - OpenSearch
  - Redis
  - RabbitMQ
- Paigaldamine võimalik tänapäevaste vahendite abil
  - Süsteemiteenused/Docker
  - Kuberetes/OpenShift

# DATA.TALTECH.EE

- DOI prefiks 10.48726
- 200 kirjet
- 100GB faile



TALLINNA TEHNIKAÜLIKOOL

The screenshot shows the TalTech Data Repository website. At the top, there is a dark purple header with the 'TAL TECH' logo on the left and a hamburger menu icon on the right. Below the header, the title 'TalTech Data Repository' is centered. A search bar with the placeholder text 'Search' and a magnifying glass icon is positioned below the title. The main content area is white and features four large icons with labels: 'Upload' (an upward arrow), 'Data sets' (a database cylinder), 'Publication database' (a document icon), and 'Data management plan' (a clipboard icon). Below these icons, there is a section titled 'Recent uploads'. The first entry is a thesis titled 'MULTI-LEVEL ANALYTICAL FRAMEWORKS FOR SUPPORTING CYBER SECURITY LEGAL DECISION MAKING Thesis' by Kasper, Agnes. It is dated 'November 13, 2015 (v1)', is a 'Thesis', and is 'Open'. It has 17 views and 11 downloads. The text 'PhD Thesis' and 'Uploaded on May 14, 2025' are also visible.