LUMI for Business

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EuroHPC Joint Undertaking

L U M I

Unique consortium of 10 countries with strong national HPC centers

- Belgium, Czech Republic, Denmark, Estonia, Finland, Iceland, Norway, Poland, Sweden and Switzerland.

- The resources of LUMI will be allocated per the investments

- The share of the EuroHPC JU (50%) will be allocated by a peer-review process (cf. PRACE Tier-0 access) and available for all European researchers

- The shares of the LUMI partner countries will be allocated by local considerations and policies – seen and handled as extensions to national resources
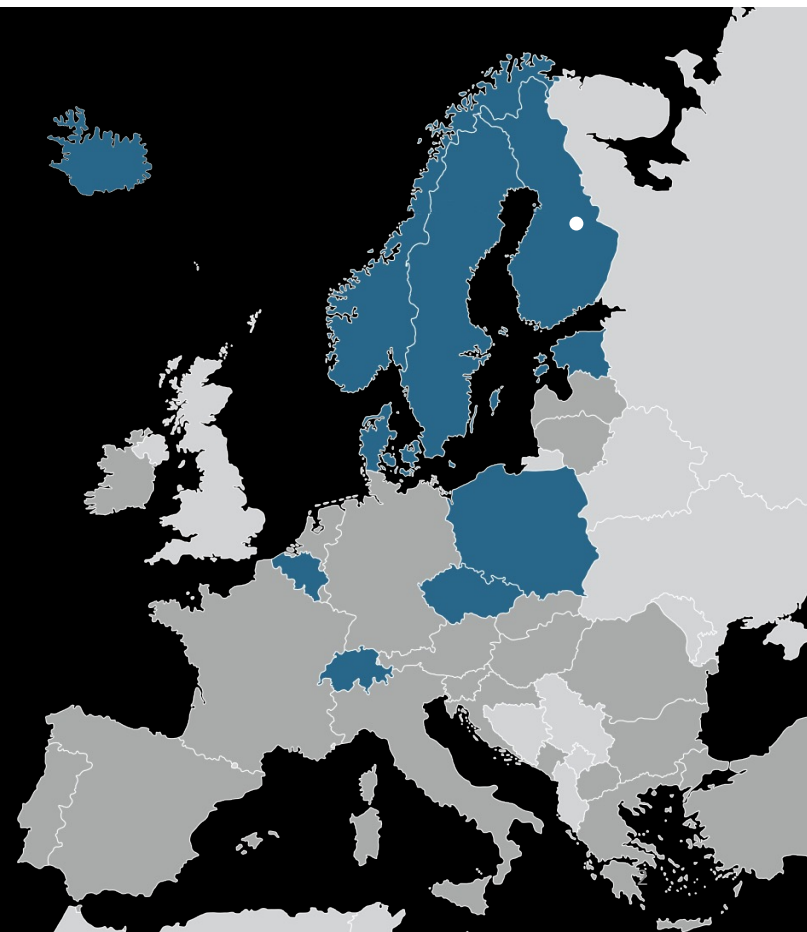
EURO

To Boost European Competences and the HPC User Base to the Next Level

33 National Competence Centres (NCC) in the area of HPC
- coordinates activities in all HPC-related fields at the national level
- serves as a contact point for customers: delivers training, interacts with industry, develops communication materials and activities
- supports the adoption of HPC services in other related fields, such as quantum computing, AI and high performance data analytics (HPDA)

Up to 20%

of LUMIs capacity

is reserved for

European industry

and SMEs

LUMI

To compete you have to compute

- A world-class supercomputing capacity with **cost-efficient pricing**

- **Superfast product development and new business opportunities** in data analytics and AI

- Top expert and training support from **LUMI User Support Team**

- A way to initiate or strengthen **cooperation with universities and research institutes**

- **Data security** based on ISO/IEC 27001 standard

Various models for Industrial Use

LUMI

| Private–Public engagement	Pay per use model	Business Finland funding
• Project in cooperation with Finnish university or research organization (academic partner) • Project lead (PI) assigned from academic partner • Free of charge if results are published	• **National LUMI capacity** Company pays market price to CSC • **EuroHPC JU capacity** Company pays market price to JU. Funding possible through PRACE SHAPE and EuroHPC JU programs for SMEs	• **Start-up and SMEs** can request HPC grant at a value of 20,000-80,000 €. Can be added to an already running project. • **Large and mid cap** companies can include computing capacity into their R&D project budget, 40 % of costs covered • Capacity is valued at market price

Top expert support and training available

L U M I

LUMI User Support Team helps

- **to estimate if large scale computing can be useful for customer's business idea**

- **to migrate customer's local computing setup to LUMI** (upscaling)

- **to optimize HPC or data analytics workflows**

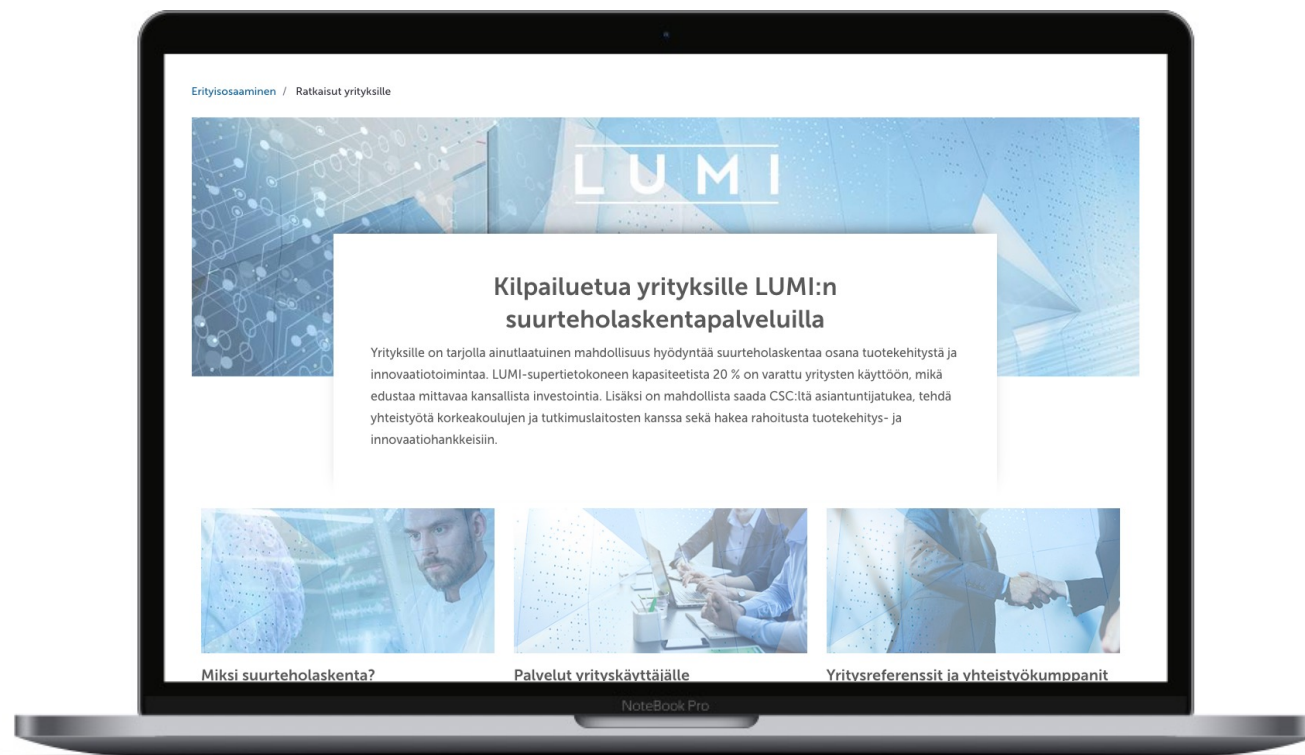- **to find an academic partner** for special use cases

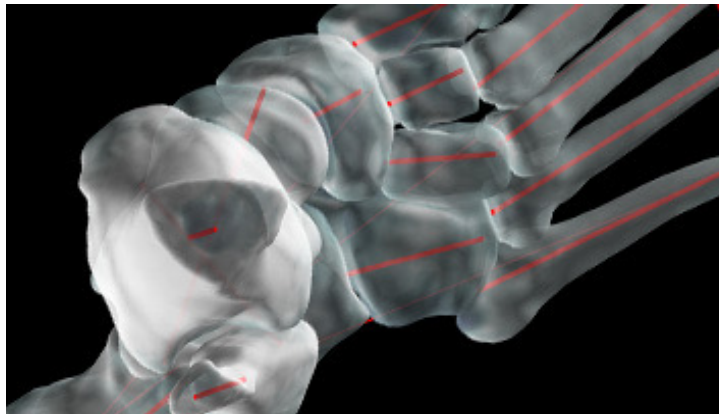**Expertise** in many fields of science and methods available:

https://research.csc.fi/sciences

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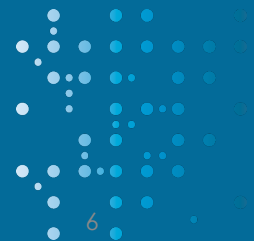
More Information: www.csc.fi/en/solutions-for-business

LUMI

DISIOR

Disior is a Finnish company that develops software for medical image analysis as a tool for the treatment of bone fractures.

CHALLENGE

Optimization of the jaw reconstruction involves calculation of the correct size and location of an implant to be installed in the joint, minimization of the loads between bone and the implant screws, and the amount of metal used in the implant.

The individual computations are not demanding per se, but since there is a huge number of computations to be optimized, the need for computing cores rises up to several thousands.

SOLUTION AND IMPACT

Thanks to help from supercomputing, the optimization of jaw bone reconstruction was approximately ten times faster than initially.

GROKE®

Groke Technologies is a Finnish company that focuses on developing intelligent methods for autonomous navigation to improve maritime safety.

CHALLENGE

How do you create an awareness system that monitors the environment and detects and recognizes objects around a vessel, from the side of another vessel to a far-away sea buoy? How can machine learning models be programmed for object detection with an optimal trade-off between accuracy and performance.

SOLUTION AND IMPACT

By building scalable data processing pipelines for training, evaluating and optimizing machine learning algorithms, and running large-scale training on a GPU-equipped HPC system, better training speed and better target detection were achieved leading to lower unit costs.

Speechly

Speechly, a Finnish start-up company, has developed technology that allows software developers to easily add an intuitive voice interface on different platforms, whether it be Android, iOS, website or video game.

CHALLENGE

How to achieve better voice control thorough real-time natural language recognition? Training and testing modern deep machine learning algorithms to find the best speech recognition models, requires large quantities of computing capacity. Model training can take anything from days to weeks.

SOLUTION AND IMPACT

During the nine-month project, Speechly improved the accuracy of its speech recognition model by almost 60% in terms of word error rate. The unprecedented HPC computing capacity enabled Speechly to work faster than before and with significantly more data.

HPC with a negative carbon footprint