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Digisfäärin esipäivä - opettajan näkökulma

30.10.2019 Joona Tolonen

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Joona Tolonen

- Opettaja ja Projektipäällikkö Kajaanin ammattikorkeakoulussa (2008 -)
- Opetettavat aineet
  - Ohjelmointi
  - Käyttöjärjestelmät
  - Virtualisointi / datacenter-ratkaisut
  - Johtaminen

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Datacenter-ratkaisut - KAMK

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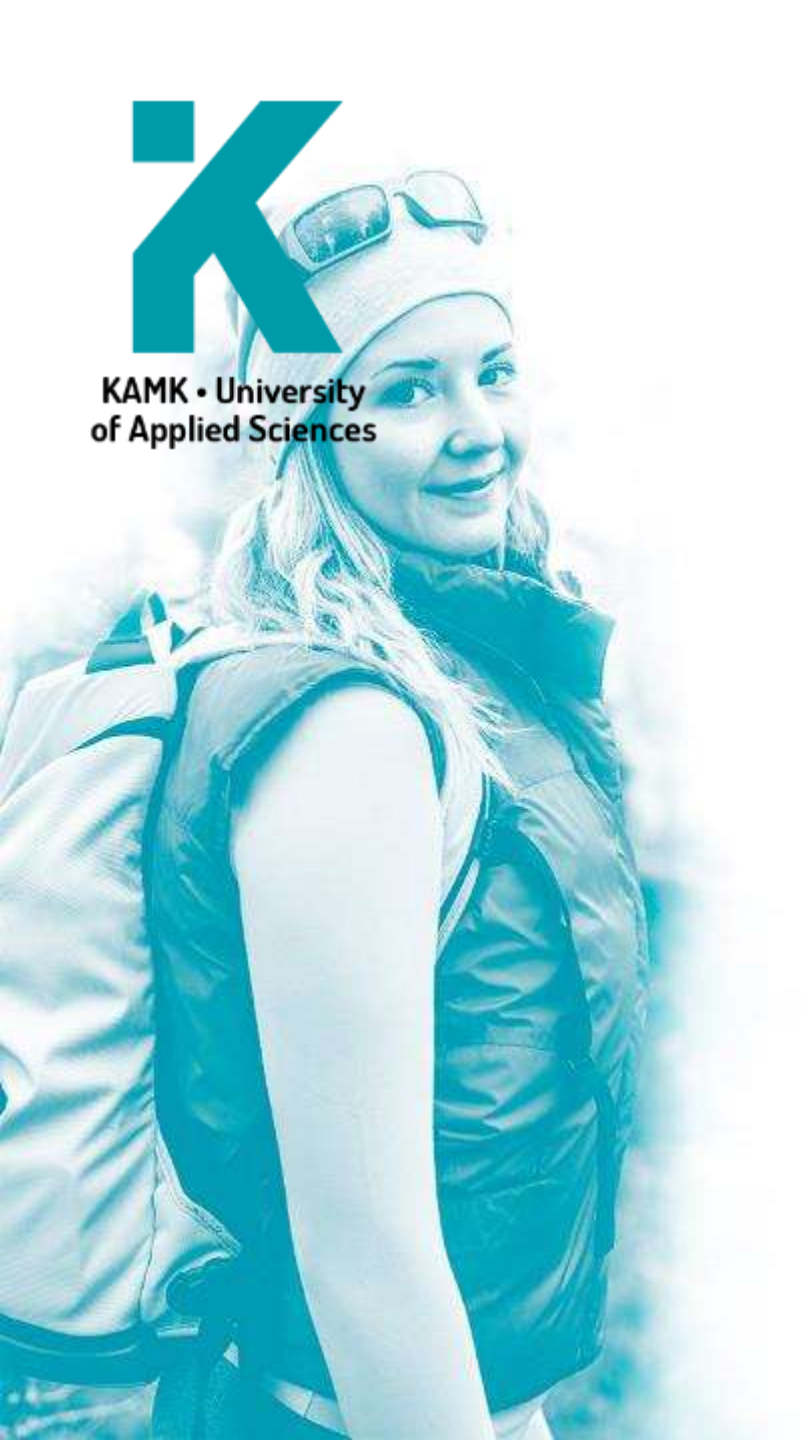
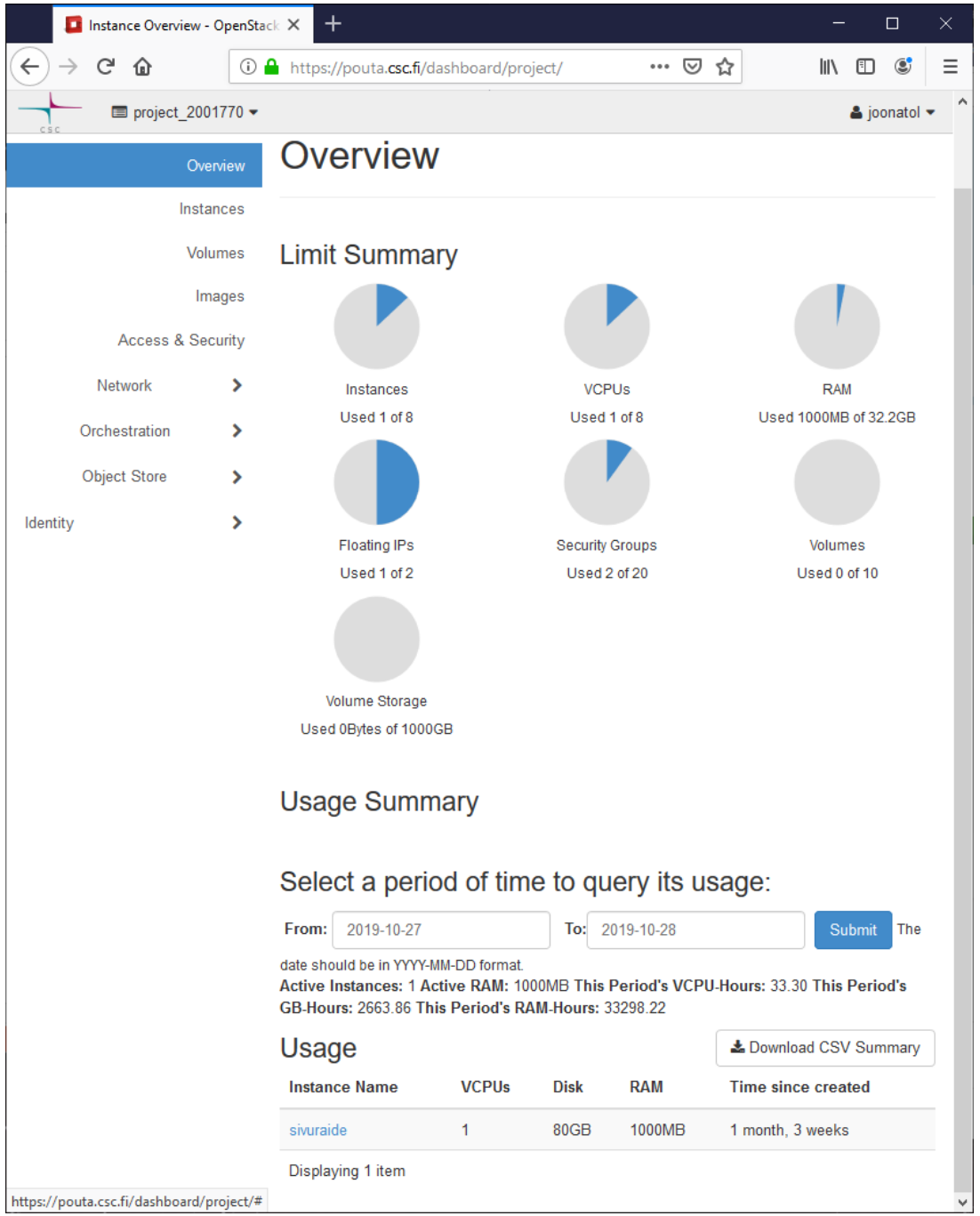
CSC:n palvelut tässä esityksessä

- Pouta
- Rahti
- Fairdata
- Puhti ja Puhti-AI
- Muita palveluja



Pouta

- OpenStack



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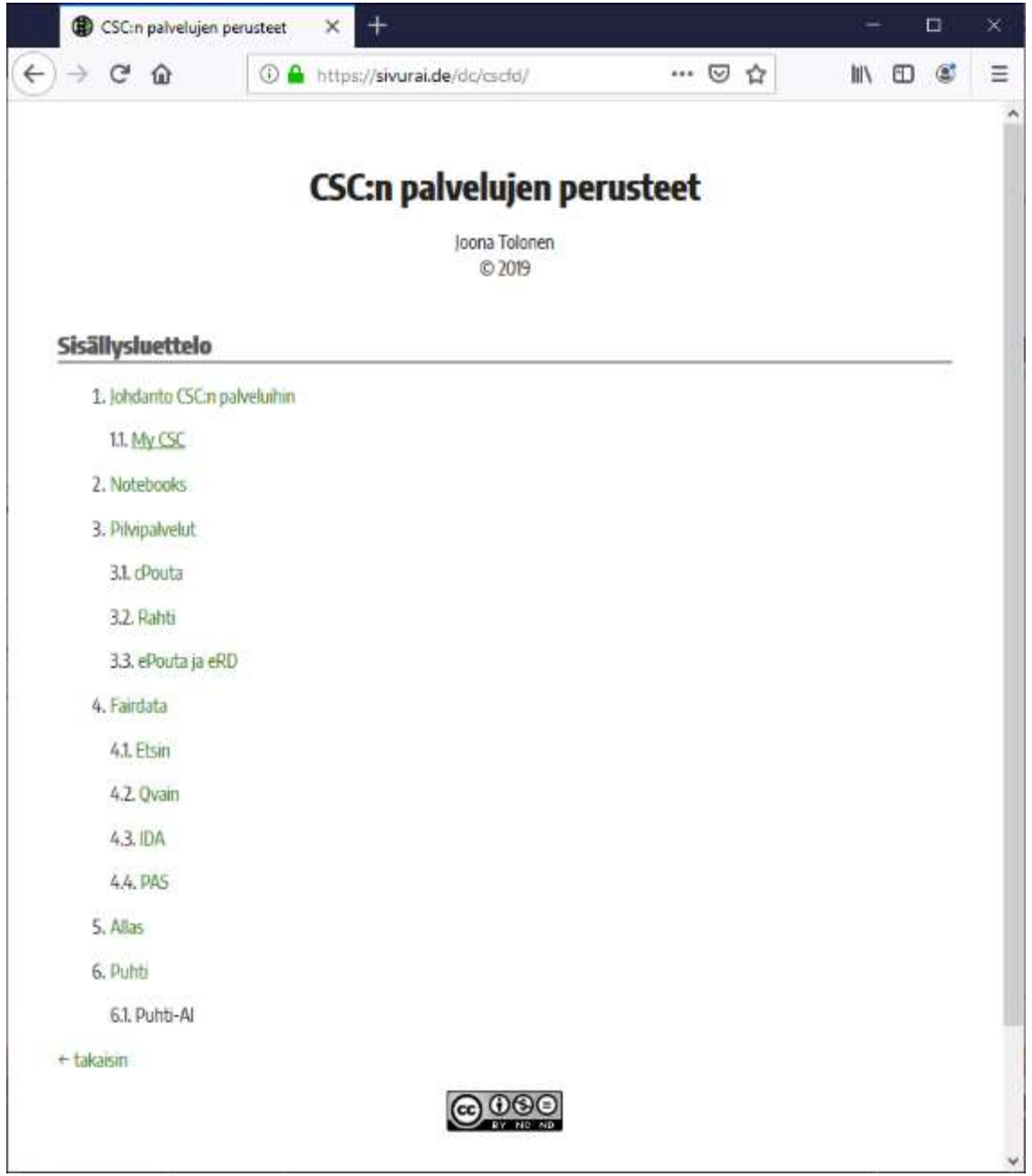
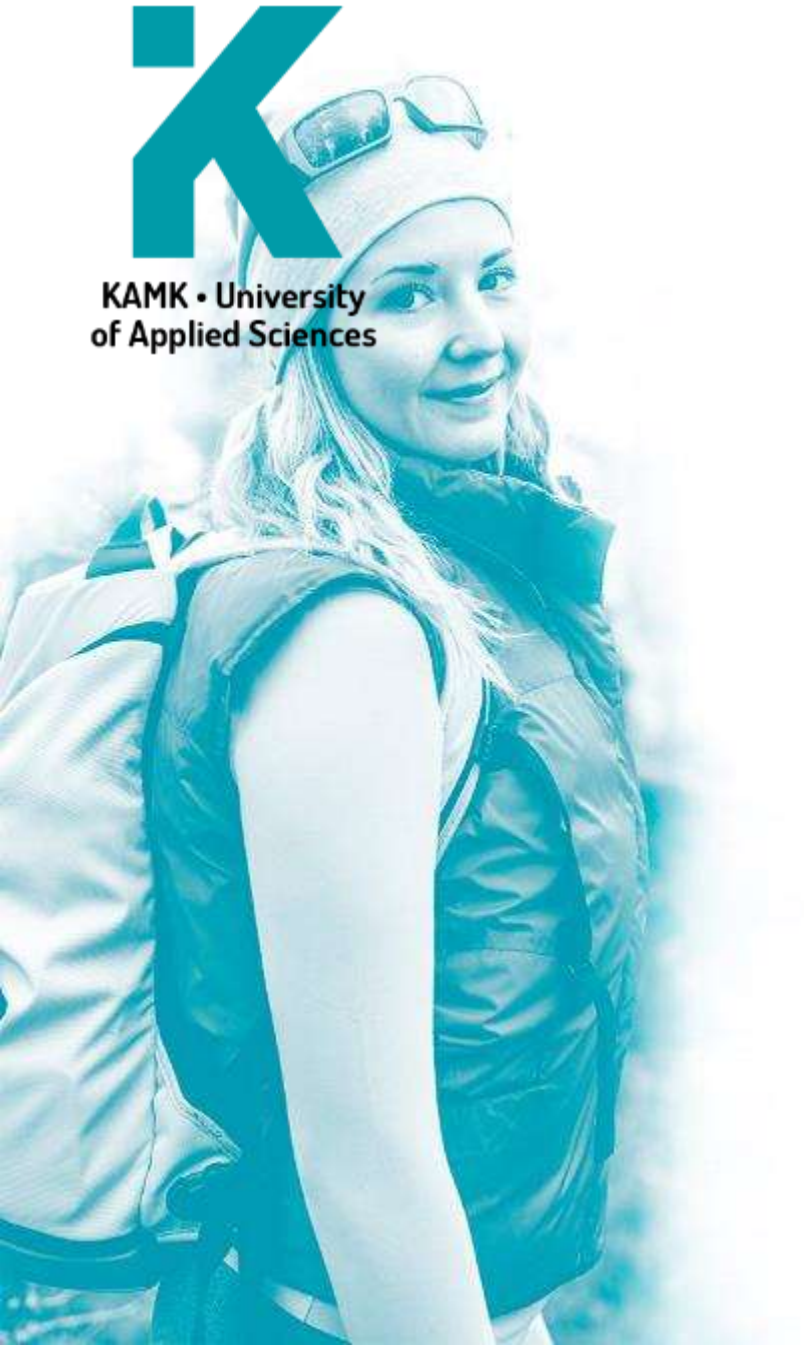
Use Case: Pouta

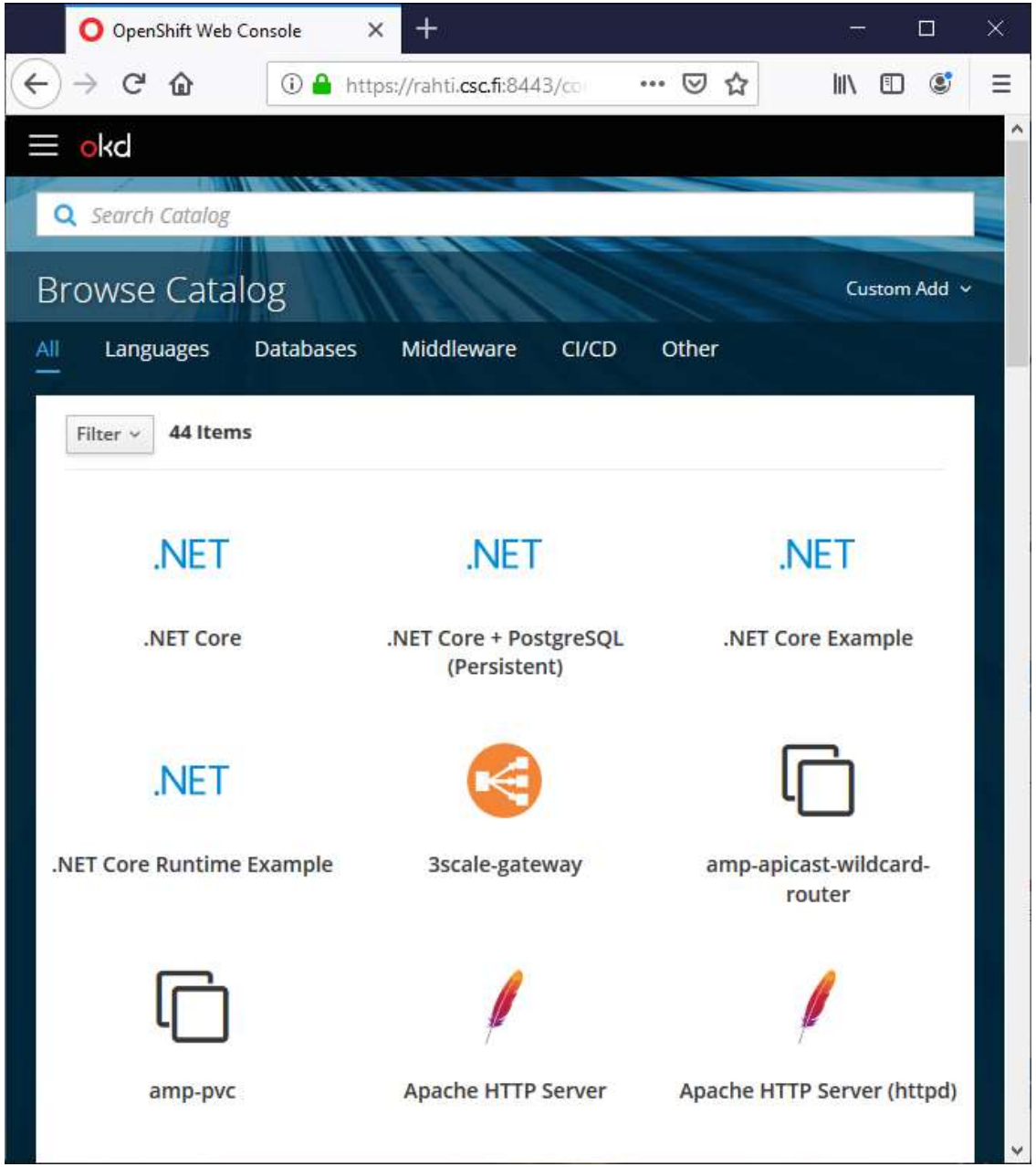
- https://sivurai.de





Rahti

- OpenShift



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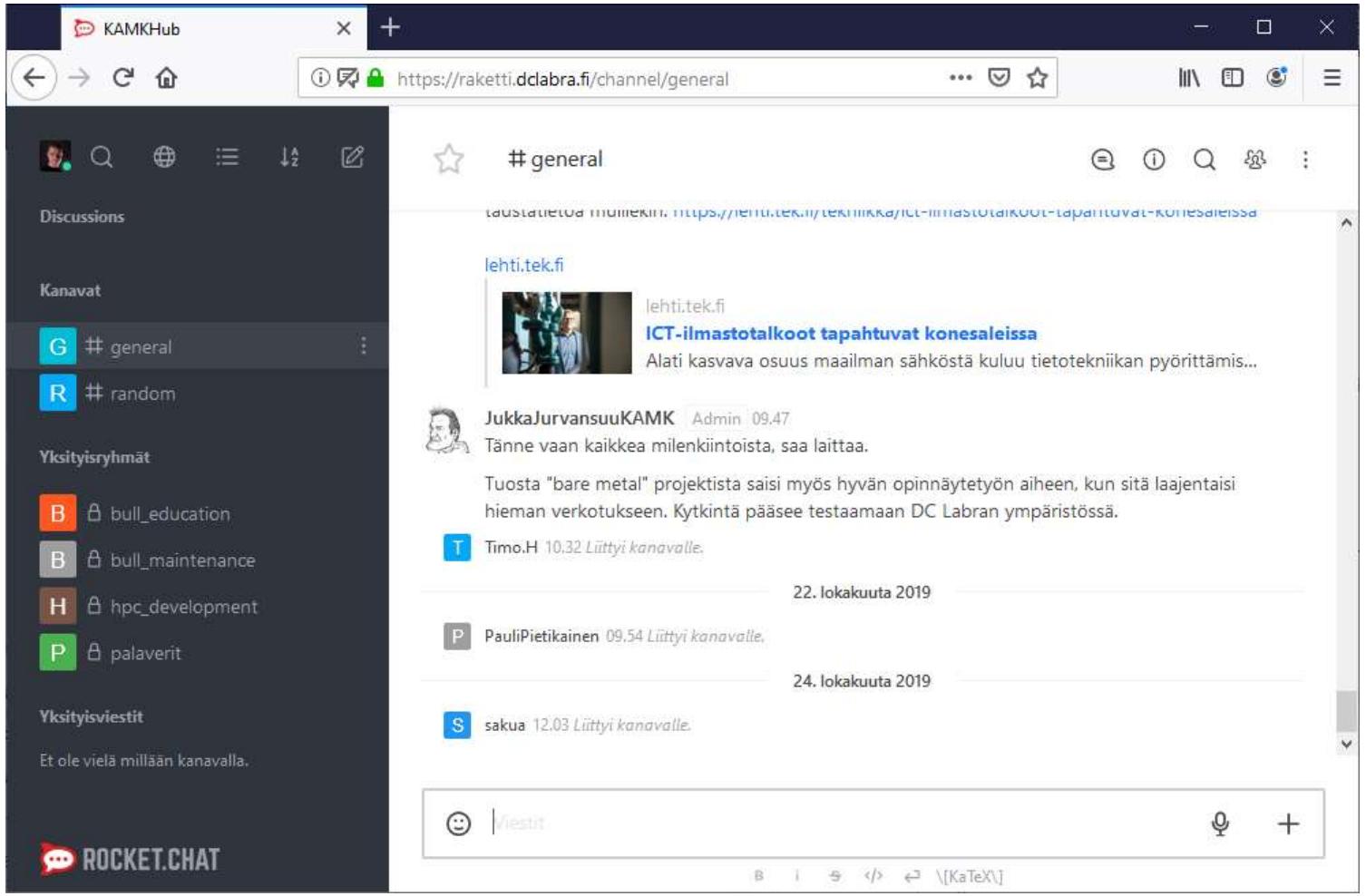
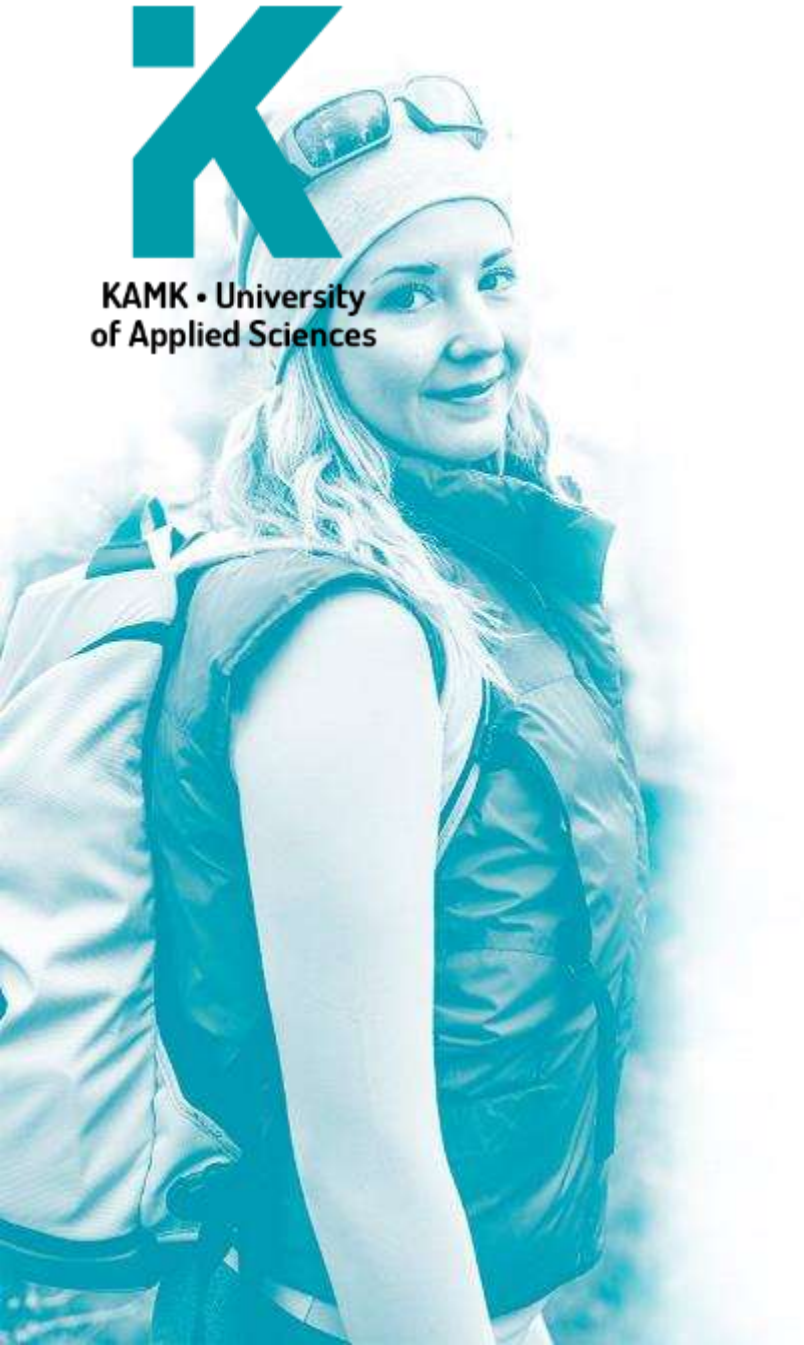
Use Case: Rahti

- https://rahti.csc.fi:8443/console/





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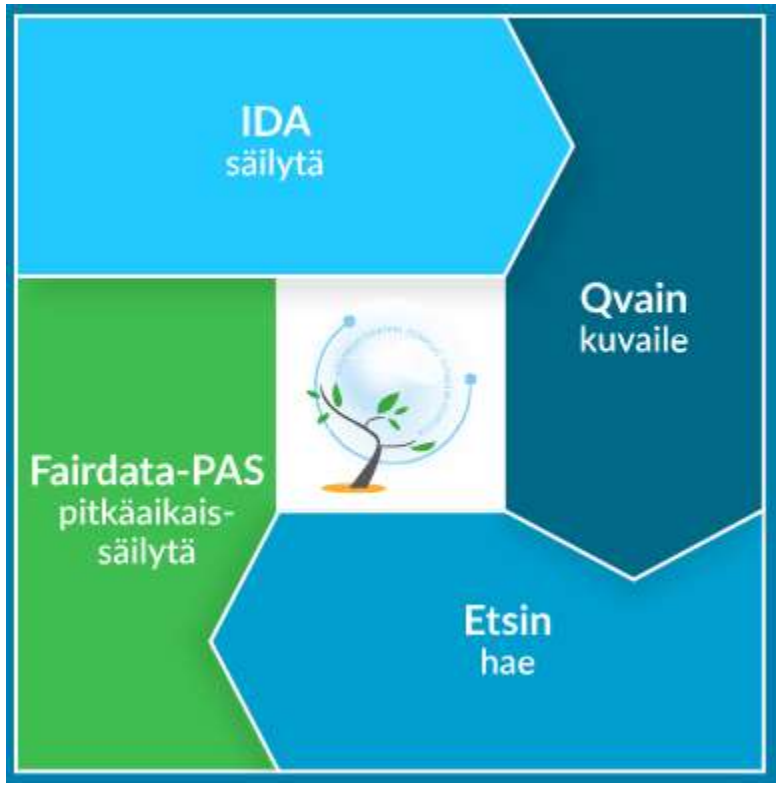
Fairdata.fi

- IDA
- Qvain
- Etsin
- PAS



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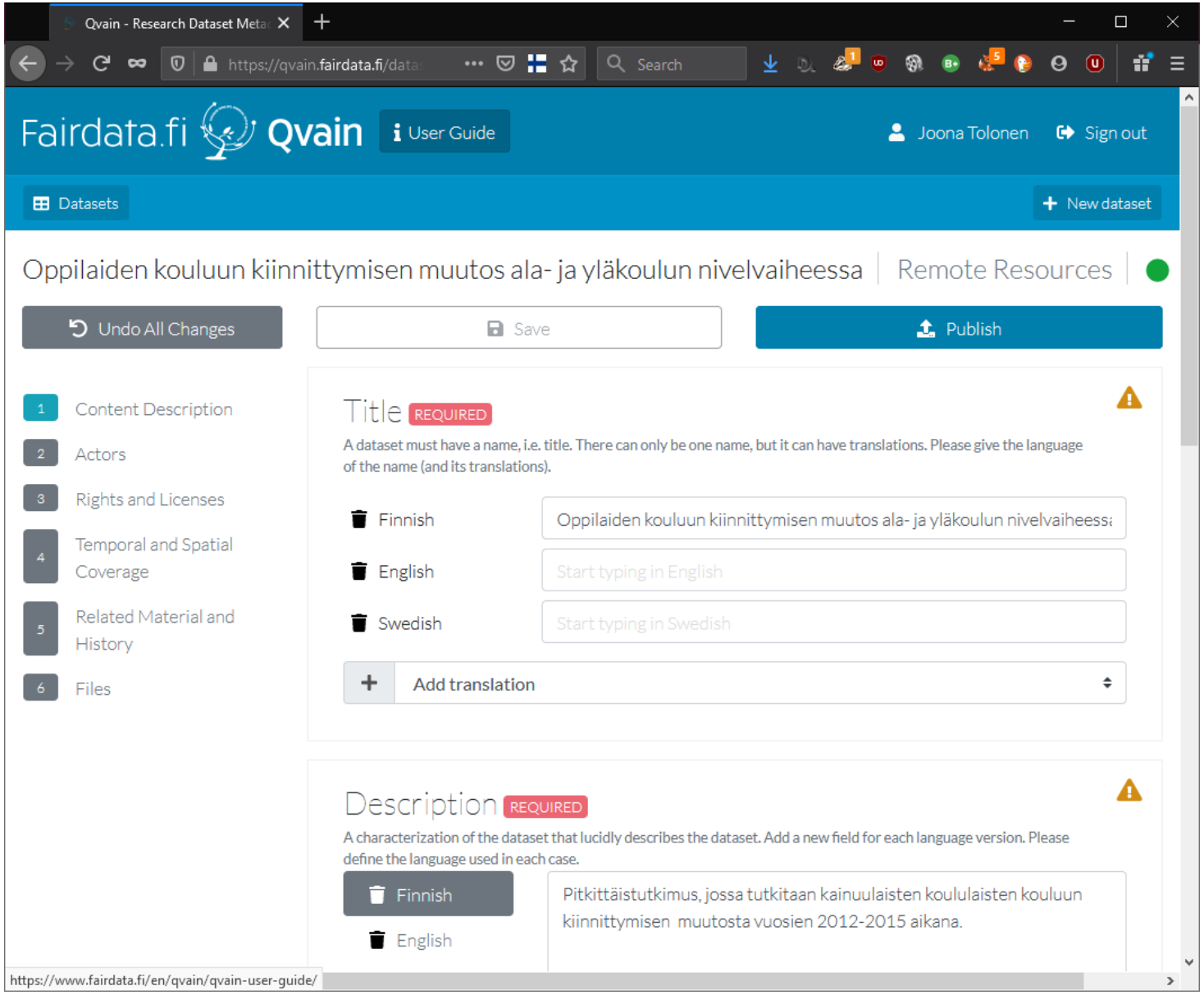
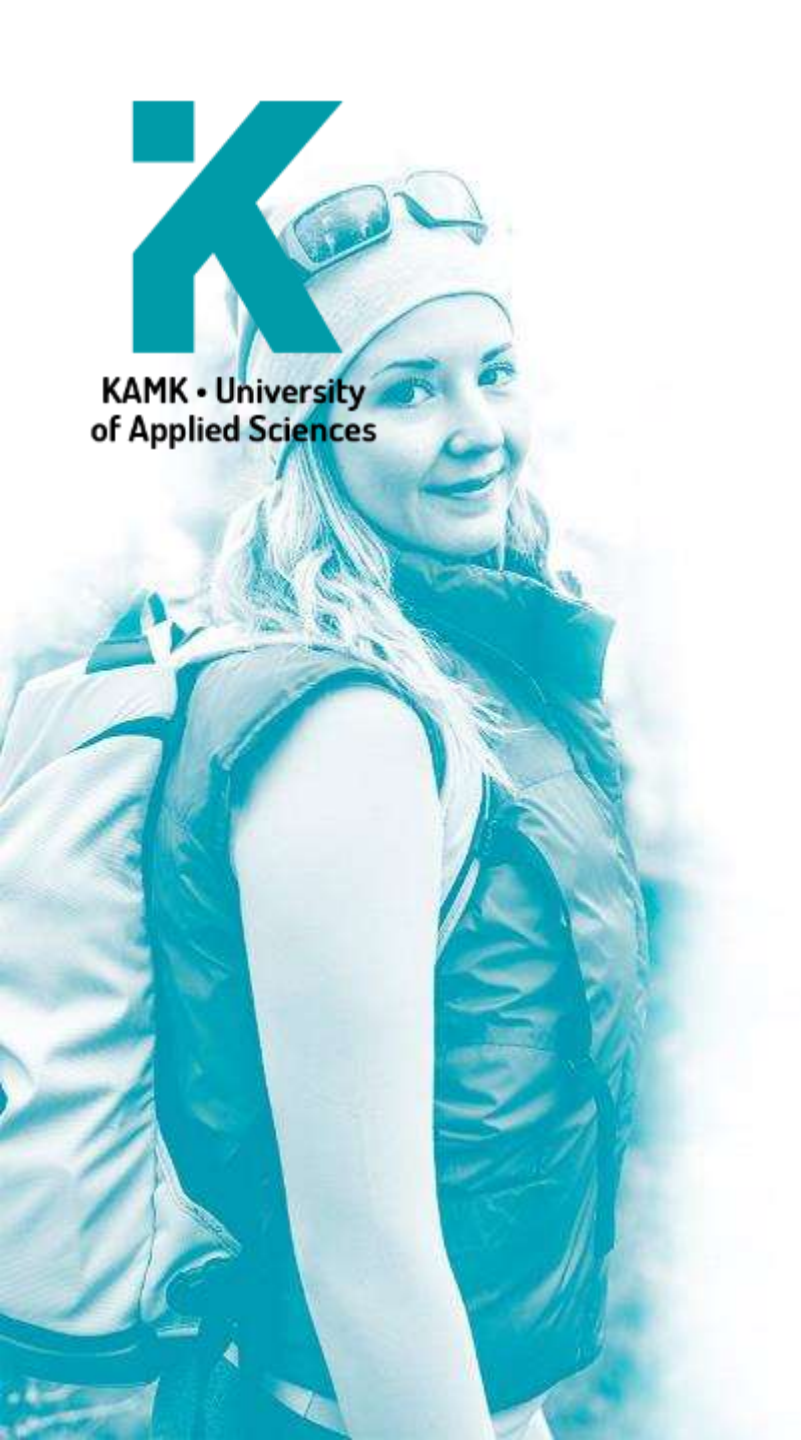
Use Case: Fairdata.fi

- Tutkimusdatan kuvailu - Qvain





Puhti ja Puhti-AI

- Atos BullSequana X400 supercomputer
- In total 682 CPU nodes, with a theoretical peak performance of 1.8 Petaflops
- Each node is equiped with two latest generation Intel Xeon processors, code name Cascade Lake, with 20 cores each running at 2.1 GHz (Xeon Gold 6230)
- The 682 compute nodes have a mix of memory sizes:
  - 192 GB on 532 nodes
  - 384 GB on 132 nodes, with 40 also containing a 3.2 TB NVMe disk for fast local storage
  - 768 GB on 12 nodes
  - 1.5 TB on 6 nodes
- Interconnect network HDR InfiniBand 200 Gbps by Mellanox, nodes connected with 100Gbps HDR100 links
- 4+ PB Lustre parallel storage system by DDN

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Use Case: Puhti ja Puhti-AI

- Selfiebooth
  - Kasvojentunnistus sovellus
  - Raspberry Pi 4
    - Laskenta GPU ympäristössä
  - https://www.youtube.com/watch?v=J4efZkoS1XI&feature=youtu.be
- Jani Sourander (TTK18SD)
  - janisourander@kamk.fi
  - https://github.com/sourander/selfiebooth

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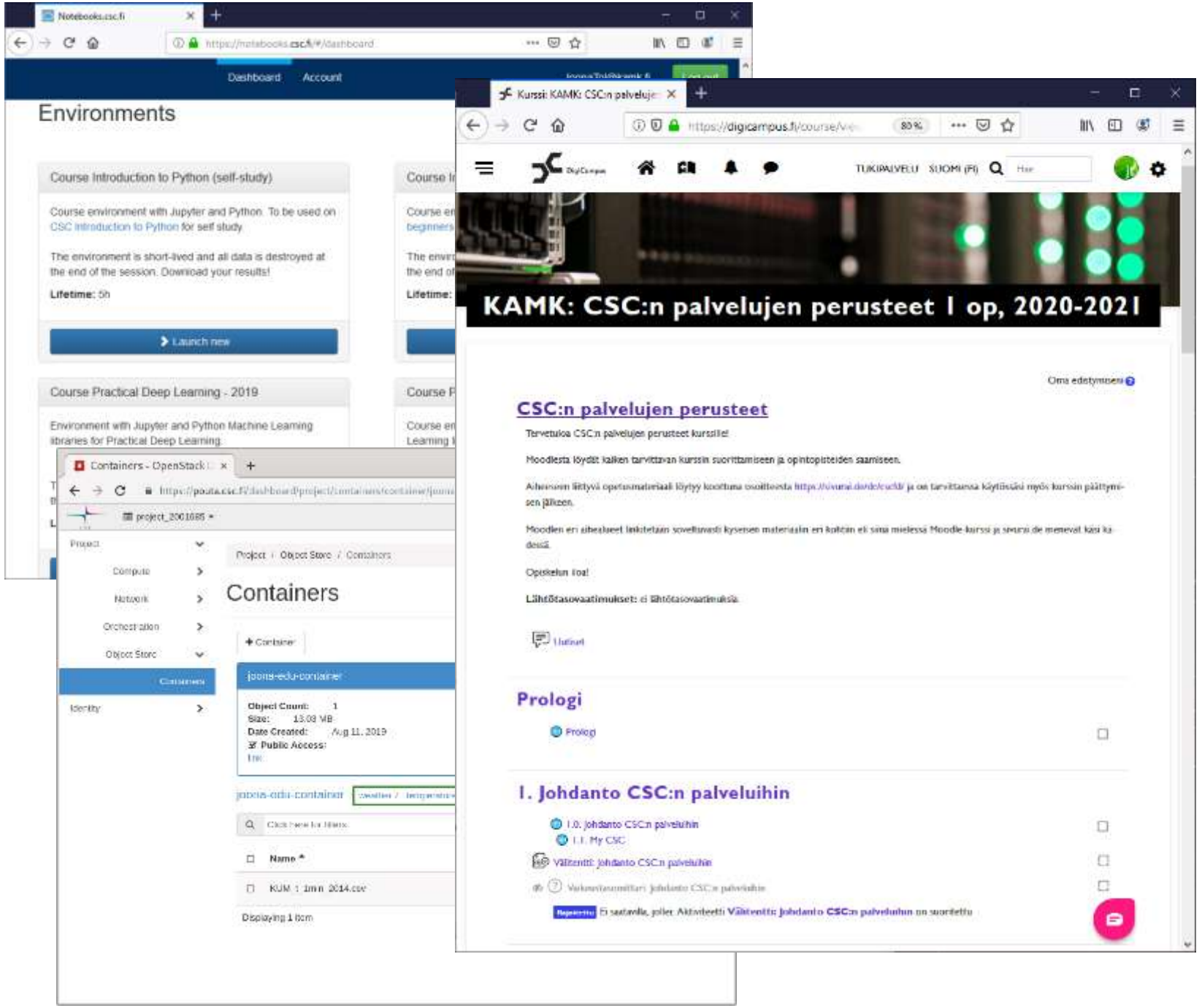
Muita palveluja

- Digicampus.fi
- Notebooks
- Allas
- ...



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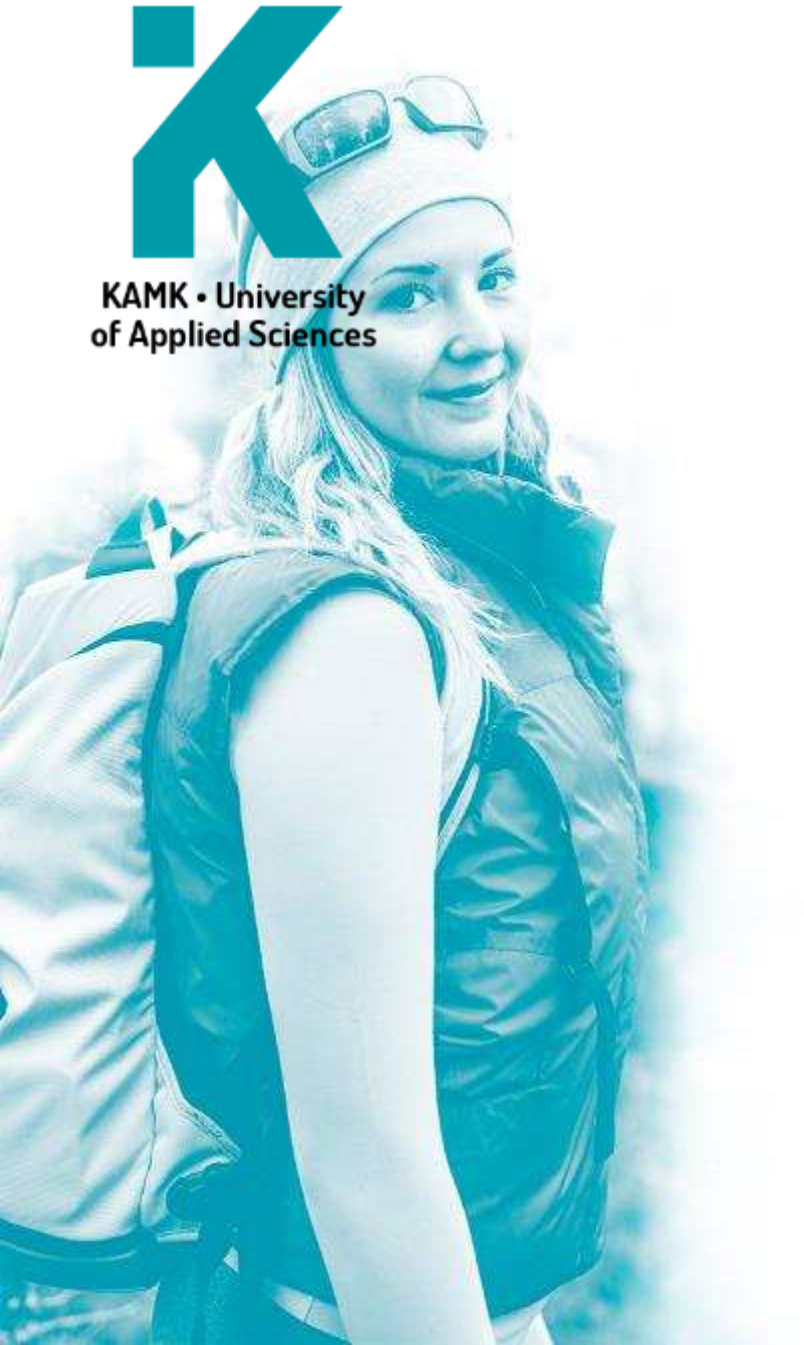
Yhteinen historiani CSC:n kanssa

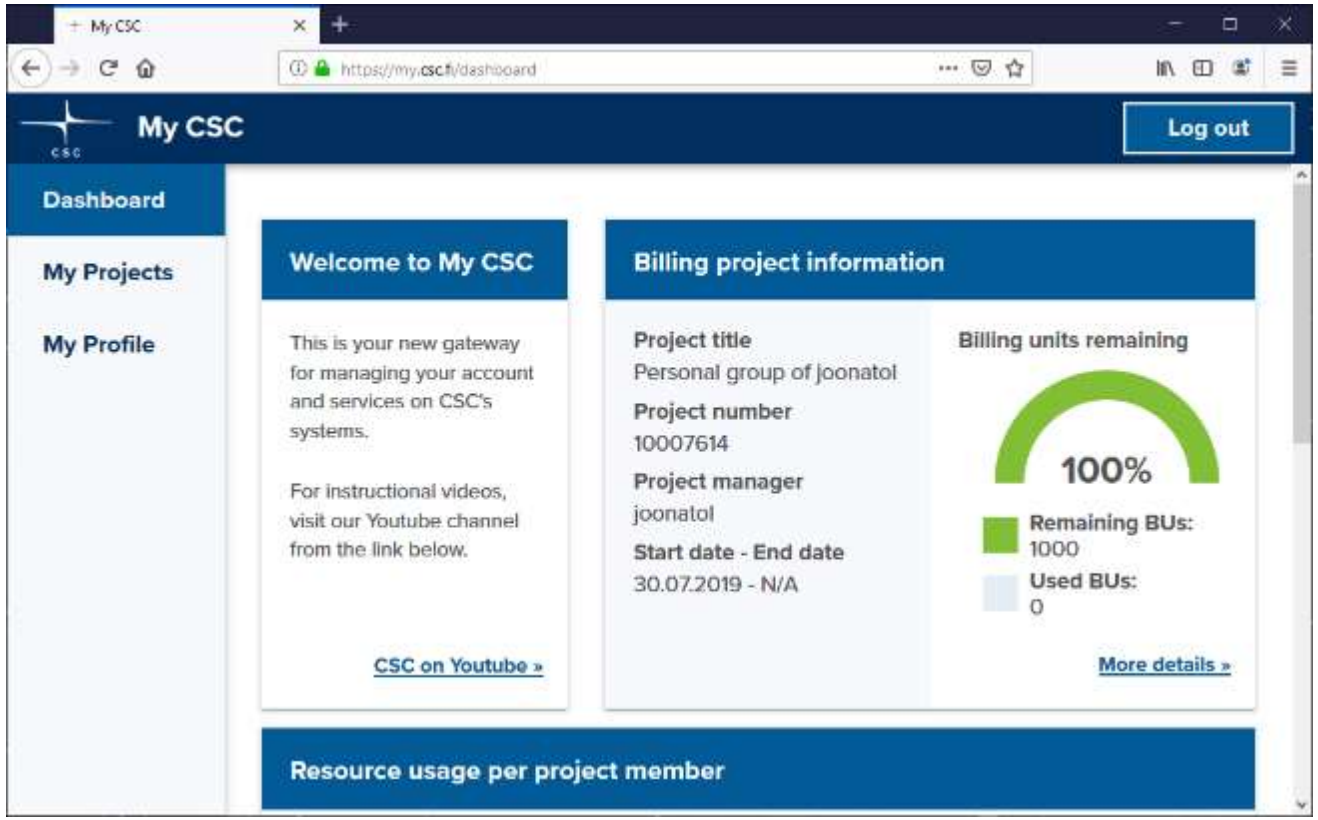
- Lomautus Kajaanin ammattikorkeakoulusta elokuussa 2019
- Työskentely CSC:llä lomautuksen ajan
  - Tutustuminen CSC:n palveluihin korkeakouluille
- Aikaisempi rooli palvelujen hyödyntäjänä ja asiakkaana

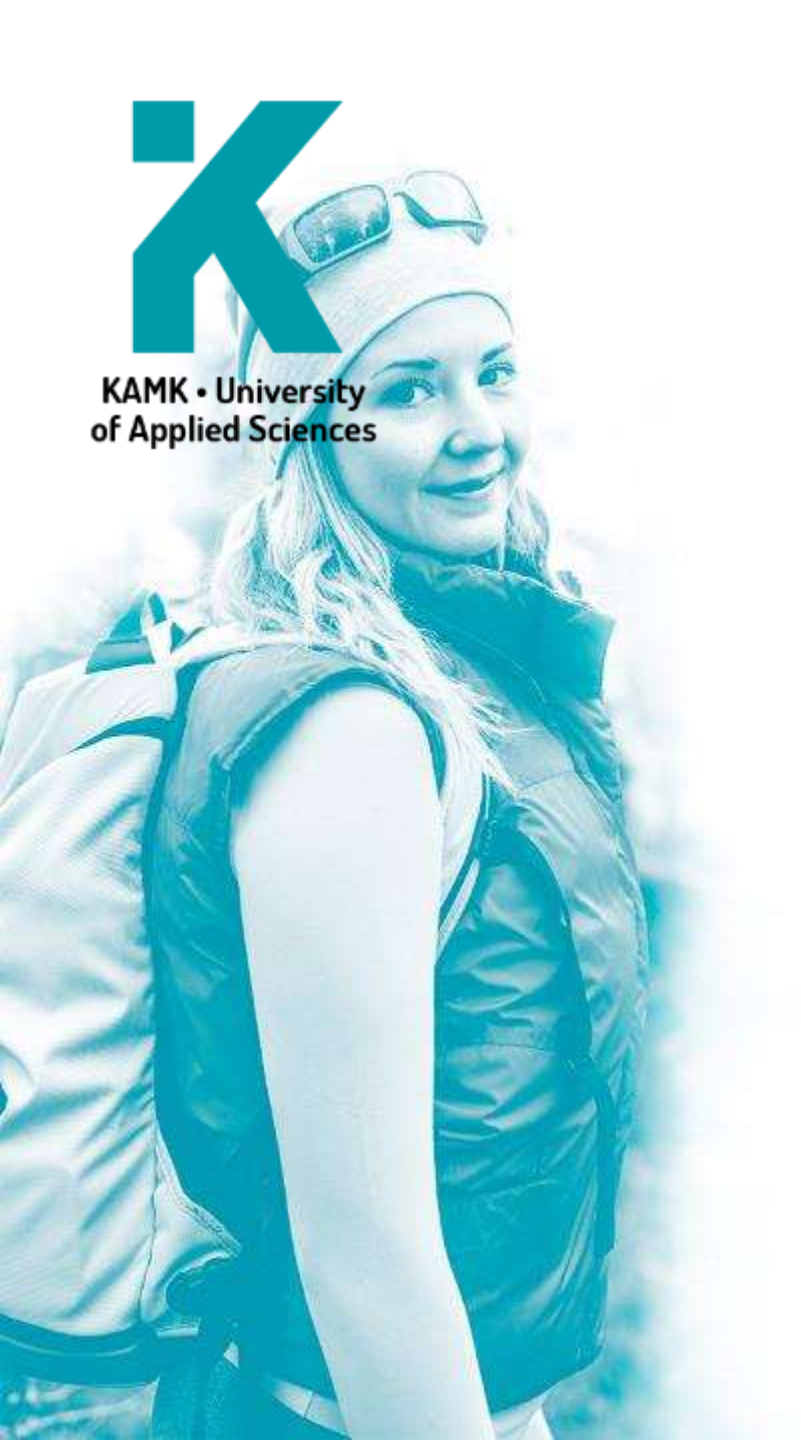
Lähde: cpsc.gov



My CSC

- https://my.csc.fi





Free-of-charge use

- The right to use CSC's services is based on users' affiliation to a Finnish higher education institution (Universities, Universities of Applied Sciences), or a state research institute.
- The following use-cases are interpreted as free-of-charge for end users in CSC's computing, cloud and storage service:

1. Research in higher education institutions
2. Research in state research institutes
3. Education in higher education institutions
4. Training provided by state research institutes
5. Cooperation with companies in higher education institutions and state research institutes
6. International usage
7. Government's analysis, assessment and research activities
8. Local IT support necessary to use cases mentioned above

Lähde: csc.fi

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Miksi CSC:n palvelut?

- Muutakin kuin supertietokoneita
- Korkeakouluille ilmaisia
- Palvelut ns. Self-provisioning periaatteella
- Sisältävät myös käyttöönoton teknisen tuen

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www.kamk.fi