CM2028 Federated Computing Privacy and Security for Health Data 4.0 credits

Federerad datoranvändning, integritet och säkerhet för hälsodata

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

The course plan with diary no. C-2024-1627 applies from HT 2025 according to faculty board decision: C-2024-0635. Decision date: 2024-10-02

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Technology and Health

Specific prerequisites

Knowledge and skills in programming, 6 credits,

Knowledge of the basics of computer science, 6 credits,

English 6

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After completing the course, students should be able to:

- explain and articulate the privacy and security risks associated with health data and health data applications
- discuss the ethical, legal and technical risks associated with data breaches and leaks
- design technical strategies to prevent and mitigate potential data leaks
- implement machine learning algorithms in a federated setup

Course contents

- Introduction to privacy, security and cryptography
- authentication, access control, security models
- Model adversarial attacks
- Introduction to federated learning

Examination

- PRO1 - Project, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- UPP1 - Written Assignments, 1.0 credits, grading scale: A, B, C, D, E, FX, F
- UPP2 - Written Assignments, 1.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Ethical approach

- All members of a group are responsible for the group's work.

- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.