Information system and software practitioners are part of the group of people who design the software systems that run our world. Sustainability is fundamental to our society. The current state of our world is unsustainable in more ways that we often recognize. Technology is part of the dilemma and part of possible responses. We often talk about the immediate impact of technology, but rarely acknowledge its indirect and systemic effects. These effects play out across all dimensions of sustainability over the short, medium and long term.

Software and information systems in particular plays a central role in sustainability. It can push us towards growing consumption of resources, growing inequality in society, and lack of individual self-worth. But it can also create communities and enable thriving of individual freedom, democratic processes, and resource conservation. Designers of software technology are responsible for the long-term consequences of the designs.

This topic contains a selection of articles in the area of sustainable IT from an information systems and software engineering angle. The course will be held as a set of seminars where we will go through the paper of the curricula.

Four seminars are planned

1: Tuesday 13/9 12:15-14:00 1-3 Introduction and core concepts
2: Thursday 29/9 10:15-12:00 4-9 Sustainability in software engineering
3: Friday 21/10 10:15-12:00 10-13 Sustainability issues with AI, Cloud computing and Blockchain
4: Tuesday 08/11 14:15-16:00 14-17 + 2 Sustainable information systems

Evaluation will be based on a scientific essay: The overall topic is:

- “How do issues related to sustainability influence IT solutions in the area of XXX”

Curricula

7. Sustainability Quantification in Requirements Informing Design: Oyedeji, S., Seffah, A. and Penzenstadler, B. 2017
8. Green IT and Green Software, Roberto Verdecchia, Patricia Lago, Christof Ebert, Carol De Vries IEEE Software 2021
11. Carbon Emissions and Large Neural Network Training David Patterson, Joseph Gonzalez, Quoc Le, Chen Liang, Lluis-Miquel Munguia, Daniel Rothchild, David So, Maud Texier, and Jeff Dean
Presenters:

1. John Krogstie
2. Isabel
3. John Krogstie
4. John Krogstie
5. Stine
6. Thomas
7. Hallvard
8. Sverre
9. Kristin
10. Simen
11. Mathias
12. Mai
13. Solveig
14. Anchana
15. Aleksandra
16. Ragnhild
17. Hans Kristian