

Essence Workshop, Uppsala 2023

Workshop on Advancements in Federated Machine Learning

Introduction

Federated machine learning (FedML) has emerged as a unique approach for privacy-preserving data analysis, enabling machine learning in scenarios where centralizing data is impractical. By allowing participants to work locally on their private datasets and contribute to a joint federated global model, FedML offers the potential to train models while simultaneously complying with legislation such as the GDPR. It empowers advanced machine learning even with private, sensitive, or hard-to-move data, thereby marking a paradigm shift in the field.

Objective

In Sweden, several active research groups are investigating different facets of federated learning, ranging from scalability and management to security and privacy. National initiatives such as AI-Sweden are also actively engaged in this domain. The objective of this workshop is to establish a collaborative platform for Swedish researchers to share their expertise and foster cooperation on mutually interesting ideas related to FedML. By facilitating engaging discussions and promoting cooperation among researchers, the workshop aims to drive advancements in federated machine learning.

Note: The FedML workshop will be held in conjunction with the main Essence Workshop. To register for the full Essence Workshop, which will take place on October 11th and 12th, 2023, please follow this link:

<https://essenceofscience.se/swedish-e-science-academy-11-12-october-2023/>

Organizing Committee

Assoc. Prof. Salman Toor, Uppsala University (Research area: Distributed Infrastructures and Federated Machine Learning)

Dr. Johan Östman, AI Sweden (Research area - Decentralized AI)

FedML Workshop Registration Link

<https://forms.gle/8cE94SQhQE87bVA88>

Venue

Department of Information Technology, Lägerhyddsvägen 1, hus 10, Uppsala
Room: 10134, Polhemssalen, Ångström Laboratory.

Zoom Link

Join Zoom Meeting

<https://uu-se.zoom.us/j/69448679759>

Meeting ID: 694 4867 9759

Passcode: 814769

Agenda

Duration: Half-day hybrid workshop (11th October 2023, 09:00 - 12:00)

Venue: Uppsala University + Zoom

First Session (09:00 - 12:00)

Welcome to the Federated Learning Workshop

Duration: 09:00 - 09:15

Presentation-1: On the Role of Federated Learning with 6G on the Horizon

Speaker: Dr. Andreas Johnsson, Ericsson Research

Time: 09:15 - 09:35

Presentation -2: Regulating Data Privacy – Balancing Legal and Technical Challenges

Speaker: Assoc. Prof. Sandra Friberg

Time: 10:30 - 10:55

Coffee break (30 minutes)

Presentation -3: Findings from the MELLODDY project: federated learning for molecule property prediction.

Speaker: Dr. Lewis Mervin

Time: 09:35 - 10:00

Presentation -4: Federated Learning---A Panacea in Medical Applications of Machine Learning?

Speaker: Assoc. Prof. Tommy Löfstedt

Time: 10:55 - 11:20

Open Discussion Session

Convener: Salman Toor and Johan Östman

Time: 11:20 - 12:00