Networking Session on Machine Learning and Data Science

CIGR - Working Group 12

October 24th, 2023

General Information

- **Modality**: Dynamic Collaborative Circles

- **Target Audience:**

  - Attendees working on the same topics and interested in building long-lasting networks that support their development and information possibilities.

  - Participants looking for complementary partners to work together in inter- and transdisciplinary projects.

- **Duration:** 1.5 hours

- **Moderation:** Luis Miranda[1]

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[1]CIGR - Working Group 12; Eberswalde University for Sustainable Development

The *International Commission of Agricultural and Biosystems Engineering (CIGR)* is a non-profit technical organisation with members working on engineering solutions around the world. The present workshop is organised by the Working Group 12 *Artificial Intelligence and Data Science*, and aims at providing an interactive space for communication between professionals who are using these methods and techniques across our diverse study areas.

As Agricultural and Biosystems Engineers, we are aware of the complexity of data science and the techniques related to it. The broader fields of Statistical Learning and Machine Learning comprise a number of techniques and applications that currently grow at a very fast pace. We believe that our application fields can particularly benefit from extended networks of cooperation and communication to stay up-to-date and enable innovative and concrete solutions towards the achievement of the Sustainable Development Goals.

Within the framework of GreenSys 2023, we provide an organised and moderated networking workshop with a focus on the social interactions and the development of new working groups.

Workshop Description

The present workshop provides a structured platform for participants to meet and interact with multiple individuals in a short time. The focus is set on the facilitation of building professional networks of practitioners working on similar as well as complementary subjects.

The workshop underlines interaction and collaboration, combining fast networking with deeper, focused discussions in thematic groups and is organized in two phases as follows.

- First phase: **Speed Networking**

  The participants will be given the opportunity to briefly share their expertise and interests on a bilateral setting. The goal is to gain knowledge on the common and complementary fields and interests and identify potential partners for deeper discussions.

- Second phase: **Unmoderated Thematic Round Tables**

  Thematic round tables will be freely available for joint discussions in groups. Participants are encouraged to use this setting to share their experiences, challenges, insights, and interests.

Topics

The following is a non-exhaustive list of topics of interest in the session:

- Phenotyping, 3D Models

- Energy harvesting, climate control, Irrigation

- Supply chains, logistics

- python, jupyter, R/RStudio, keras, CLI

- Image analysis, Multispectral sensors, Chlorophyll fluorescence

- openCV, Computer Vision

- Time Series Analysis and Forecasting

- Robotics, UAV

- Random Forests, Bayesian methods, Non-linear regression

- t-SNE, MonteCarlo, Evolutionary algorithms

- Deep learning, transformers

- Edge computing, Parallel computing, Scientific computing, GPUs

- IoT, Smart Sensors

- Decision Support Systems, Bots

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