

EECS Ph.D. Dissertation Announcement

**XAIOT ENABLED SMART SENSING OF SOIL CARBON CONTENT FOR
SMART APPLICATION OF BIOCHAR
DI AN
ELECTRICAL ENGINEERING AND COMPUTER SCIENCE
UNIVERSITY OF CALIFORNIA, MERCED**



More Information

DATE: March 20TH, 2024

TIME: 12:00PM – 1:00 PM

LOCATION: SRE 307

ZOOM LINK:

<https://ucmerced.zoom.us/j/4528701714>

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Abstract

Soil carbon content is vital to the way ecosystems function, and it plays an important role in soil properties in producing food, storing water, and mitigating climate change. Human activities deplete soil cover and result in immediate and enduring losses of soil organic carbon. We must minimize soil carbon loss due to erosion and greenhouse gas (GHG) emissions into the environment. However, it is still a challenging problem to quantify the effect of how much carbon (biochar) is applied to the soil in terms of carbon sequestration accurately, quickly, cost-effectively, and on a large-scale field. Therefore, Explainable Artificial Intelligence of the Internet of Things (XAIoT) is proposed to address the reliability issue and defines a set of AI models that are interpretable by domain knowledge from environmental and engineering domain experts.

Biography

Di An earned his M.S. degree in Electrical Engineering & Computer Science from the University of California, Merced, U.S.A. He is a Ph.D. candidate in Electrical Engineering & Computer Science from the University of California, Merced, U.S.A. He has been working on XAIoT-enabled smart sensing of agricultural methane emissions and smart biochar applications using proximal radar arrays to fight climate change. His research interests are the cyber-physical system, multiple robot swarming algorithms for odor tracking and mapping, automation control in general, and fractional control in particular.