Half-Day PDC

Artificial Intelligence in Occupational Health and Safety

The Chicago Local Section of the American Industrial Hygiene Association (AIHA) and the Great Lakes Center for Occupational Health and Safety (GLCOHS) at the University of Illinois at Chicago (UIC) would like to invite you to a half-day in-person professional development course (PDC) on Artificial Intelligence (AI) in Occupational Health and Safety (OHS).

Part 1
Presentation
Part 1 of the PDC will begin with a presentation on AI in OHS. The presentation addresses important and fundamental topics such as AI systems, AI/OHS project pipeline and roles, and machine learning. Other topics such as ethical considerations in AI/OHS systems and AI project pitfalls are discussed in this part. Several AI/OHS examples will also be briefly described. The attendees will be given time to ask questions regarding the presented materials.

Part 2
Tour UIC AI Laboratory & Class Activity
Part 2 of the PDC will include a tour of the UIC AI Laboratory while completing a class activity. The UIC AI laboratory is a state-of-the-art AI laboratory that is housed within the UIC School of Public Health (SPH) Environmental and Occupational Health Sciences (EOHS) Division. Spanning 300 square feet, this cutting-edge facility is equipped with a diverse array of hardware, including wearables, cameras, exosuits, and drones. The lab prominently features a selection of Herowear exosuits specifically designed to augment lifting capabilities. Complemented by a load cell integration, these exosuits serve as a foundation for a model aimed at monitoring user fatigue and stress levels. Complementing this capability, Autel drones are deployed to oversee dynamic sections of workplaces, evaluating the adherence to proper personal protective equipment usage. Fitbit wearables play an integral role within the lab environment, capturing users' vital signs and enabling real-time analysis of their activities. Meanwhile, Intel Realsense cameras serve as stationary observers, adeptly capturing and analyzing user posture to provide insightful recommendations for ergonomic enhancements. These hardware components collectively empower students, facilitating the execution of impactful training initiatives and research projects within the realms of AI and OHS applications.

Upon completion, participants will be able to:
- Explain AI and understand AI in OHS
- Understand how AI/OHS projects are completed
- Identify their roles in AI/OHS projects
- Classify different AI/OHS systems
- Understand ethical issues related to AI systems

Speaker
Houshang Darabi, Ph.D.

Speaker Bio
Dr. Houshang Darabi holds a Ph.D. degree in Industrial and Systems Engineering. He is a professor with the Department of Mechanical and Industrial Engineering, and the Department of Computer Science at UIC. He has served as the Co-director of the GLCOHS Occupational Safety program since 2014. In 2021, Dr. Darabi led a team of researchers to create a framework titled *Risk Evolution, Detection, Evaluation, and Control of Accidents* (REDECA) and used it to perform a comprehensive review of AI/OHS literature. In this comprehensive literature review, two hundred and sixty AI papers across five sectors (oil and gas, mining, transportation, construction, and agriculture) were reviewed using the REDECA framework to highlight current applications and gaps in OHS and AI fields. In 2022, Dr. Darabi led efforts in collaboration with the GLCOHS Continuing Education (CE) program to develop the first course in the United States that was intended to train OHS industry professionals in AI. This course has been offered twice and has received very positive feedback from the attendees. Through this partnership Dr. Darabihas established an innovative laboratory dedicated to the advancement, exploration, and testing of AI-driven technologies for the enhancement of OHS practices.

Date
Tuesday, December 12, 2023

Location
1603 W. Taylor Street
Chicago, IL 60612
Room 160 (gym)

Time
11:30 AM	Registration
12:00 – 13:00	Catered lunch will be provided at the event (networking)
13:00 - 14:30	Part 1: Instruction	AI in OHS Presentation
14:30 - 16:00	Part 2: Tour, class activity	Tour of UIC AI Laboratory

Continuing education certificates from GLCOHS are available for participants.

Cost
Full Member: $75
Affiliate Members & Guests: $85
Student: $30