Invited Speaker ENIAC 2021: **Levi Lelis**
(University of Alberta, Canada & UFV Viçosa, Brasil)

Title: **Learning from Machines**

Date/Hour: December 02, 2021 – 11:00
(Timezone : GMT – 3)

Abstract:

We recently witnessed tremendous achievements of machine learning systems-. For example, AlphaZero achieved superhuman performance on challenging games such as Go, chess, and shogi. Yoshiharu Habu, a 9-dan shogi player stated the following about AlphaZero: “Some of its moves go against shogi theory and seem to put AlphaZero in a perilous position. But incredibly it remains in control of the board. Its unique playing style shows us that there are new possibilities for the game.” While systems such as AlphaZero are able to learn strong and novel strategies for difficult problems, the generated solutions are encoded in opaque models, which are hard to interpret. Lack of interpretability hinders our ability to learn from these systems. In this talk I will discuss different methods that allow people to learn from opaque and transparent intelligent systems. I will present study cases where people learned from intelligent systems (i) how to strategize in the Olympic sport of curling, (ii) how to solve puzzles, (iii) and how to write better computer programs for playing games.

Short Bio:

Levi Lelis’ research goal is to develop intelligent systems that are able to augment people through teaching and collaboration. Currently, his group is working on algorithms to generate knowledge, such as strategies for playing games, that people can easily interpret and understand. They seek to use machine-generated knowledge to teach humans how to solve problems. For example, these machine-created interpretable strategies can be used to compile human-readable manuals for teaching people game strategies. Levi and his team are also investigating the use of interpretable machine-generated knowledge in human-machine collaborative tasks, where algorithms help humans to solve problems. In his current research, he and his group are seeking to advance the state of the art in heuristic search, machine learning, program synthesis, and explainable artificial intelligence.

Levi is an Assistant Professor in the Department of Computing Science at the University of Alberta and a Professor on leave from the Universidade Federal de Viçosa, Brazil. He received his Ph.D. in Computing Science in 2013 from the University of Alberta. Levi has co-authored more than 45 refereed papers at prestigious artificial intelligence venues.