

## **Title: Evolutionary Methods for Wildlife Conservation and Public Safety**

### **Abstract:**

Security Games (SGs) is a rapidly growing research field devoted to modeling threats to public safety, natural resources, and social good, such as international terrorism, mass poaching or logging, or weapons or drug smuggling, in the form of games played between security forces and organized criminals.

I will start with an introduction to SGs and a brief summary of the mainstream solution methods that are based on Mixed Integer-Linear Programming (MILP), followed by a presentation of several evolutionary approaches developed by our research group at Warsaw University of Technology. The last part of the talk will be devoted to a case study – poaching prevention in one of the national parks in Africa, based on our joint research with the Teamcore group at Harvard University.

### **Short Biography**



Prof. Jacek Mańdziuk, Ph.D., D.Sc., is a full professor at the Faculty of Mathematics and Information Science, Warsaw University of Technology, Head of Division of Artificial Intelligence and Computational Methods, and Head of Doctoral Program in Computer Science at this faculty.

He is the author of 3 books and over 200 research papers. He was General Co-Chair of the 2021 IEEE Congress on Evolutionary Computation, Krakow, Poland, and Chair of the annual IEEE SSCI Symposium on Computational Intelligence for Human-like Intelligence 2013-2024.

Prof. Mańdziuk is a recipient of the Fulbright Senior Research Award (UC Berkeley and ICSI Berkeley, USA) and the Robert Schuman Foundation Fellowship (CNRS, Besancon, France). In 2015-2017 he was a visiting professor at Nanyang Technological University in Singapore. He is a Founding Chair of the IEEE ETTC Task Force on Toward Human-like Intelligence, and serves/served as an Associate Editor for the IEEE Transactions on Neural Networks and Learning Systems, the IEEE Transactions on Computational Intelligence and AI in games, and the ACM Computing Surveys.

His research interests include application of Computational Intelligence and Artificial Intelligence methods to dynamic and bilevel optimization problems, abstract visual reasoning, games, and human-machine cooperation in problem solving. He is also interested in the development of human-like learning and problem-solving methods. For more information please visit <http://www.mini.pw.edu.pl/~mandziuk>.