



Guest Lecture

Prof. Minho Jo
Korea University

Title: Key Transformer Algorithms for ChatGPT and Security Issues

Time: March 12, 2024, 11.30am

Place: Room P150, Via Belzoni, 7, Padova

Scientific Committee

Prof. Mauro Conti, Dr. Francesco Marchiori (University of Padua, Italy)

Executive Committee

Dr. Francesco Marchiori, University of Padua, Italy

Abstract

ChatGPT has become powerful in practical tasks in many areas such as e-business, economics, medical science, finance, science, engineering, software development, customer services, human resources management, marketing, autonomous vehicle, public relations, entertainment, military, and many more. ChatGPT is one of large language models (LLMs) and most popular now. In this talk, Prof. Jo will introduce how ChatGPT came from the Transformer algorithms and its architecture which is a basis for almost all large language models (LLM). Because LLMs appeared recently but has been rapidly spreading into our daily lives, it has faced many fatal vulnerabilities. Prof. Jo will present several vulnerabilities and security issues of LLMs.

Bio

Minho Jo (Senior Member, IEEE) received the B.A. degree from the Department of Industrial Engineering, Chosun University, Gwangju, South Korea, in 1984, and the Ph.D. degree from the Department of Industrial and Systems Engineering, Lehigh University, Bethlehem, PA, USA, in 1994. He is the Full Professor with the Department of Computer Convergence Software, Korea University, Sejong, South Korea, where he is the Director of the IoT & AI Lab. Prof. Jo is the Director of Brain Korea 21 "IoT Data Science" project supported by the Korean government. His current research interests include IoT, blockchain and cryptography, LLM/ChatGPT, artificial intelligence and optimization theory, big data, network security, cloud/edge computing, and autonomous vehicles. The average number of citations per publication authored by Prof. Minho Jo (from 2013 through 2022) is 41.7 and Average Field-Weighted Citation Impact (FWCI) of Prof. Minho Jo (from 2013 through 2022) is 4.42 (based on SCOPUS SciVal. Exactly FWCI = 1 means that the output performs just as expected for the global average. FWCI = 4.42 means 342% more cited than the global average.)

Prof. Jo is a recipient of the 2018 IET Best Paper Premium Award by the United Kingdom's Royal Institute of Engineering and Technology. He was awarded with 2011 Headong Outstanding Scholar Prize. He is one of the founders of the Samsung Electronics LCD Division. He is the Founder and the Editor-in-Chief of KSII Transactions on Internet and Information Systems (SCIE/JCR and SCOPUS indexed. <https://itiis.org>). He was the South Korea's Presidential Commission on Policy Planning. He served as an Associate Editor of IEEE SYSTEMS JOURNAL, IEEE ACCESS, IEEE INTERNET OF THINGS JOURNAL, Editor of IEEE WIRELESS COMMUNICATIONS, and Editor of NETWORK, respectively. Prof. Minho Jo is the Chair of the 6th IEEE International Conference on Advanced Information and Communication Technologies (AICT 2024), and was the General Co-Chair of VTC2021-Fall (2021 IEEE 94th Vehicular Technology Conference), respectively.