

## Hybrid SORS: Large-Scale Graph Neural Networks for Real-World Industrial Applications

### Objectives

**Abstract:** A graph or network is a powerful data structure that can represent relationships between any entities in both the digital world and the physical world. The way of analyzing graphs has been advancing from algorithm-based approaches to data-driven approaches with machine learning and neural networks just like other types of data such as text, image, and speech. In this talk, I will describe how graph neural networks have emerged as a powerful learning tool that backs up conventional graph algorithm-based approaches, and also introduce our ongoing research projects and collaborations with industry around graph neural networks such as recommendation. I will briefly introduce a nationwide cloud computing project called “mdx” as well as a nationwide materials informatics project named ARIM (Advanced Research Infrastructure for Materials and Nanotechnology).



Short bio:

Prof. Toyo (Toyotaro) Suzumura is a professor and computer scientist at the graduate school of information science and technology at the University of Tokyo since April 2021. His current research interest is artificial intelligence - mainly graph neural networks and their application to e-commerce, medical science, finance, and such. After obtaining a Ph.D. in computer science in 2004 from Tokyo Institute of Technology, he has 17-year experiences from 2004 to 2021 in IBM Research as a principal research scientist and project lead in global research labs including Tokyo(2004-2013), Dublin(2013-2015), and IBM T.J Watson Research Center and MIT-IBM Watson AI Lab in New York (2015-2021). As for his research achievements, he won an international competition related to large-scale graph processing named Graph500 ten times since 2014. He has published 100+ papers to top-tier international conferences and journals and served as a PC chair of IEEE BigData 2017 as well as serving program committee members in numerous international conferences such as AAAI, ACM/IEEE Supercomputing, and IEEE Cloud.

## Speakers

**Speaker:** Toyotaro Suzumura, Professor, Graduate School of Information Science and Technology, University of Tokyo

**Host:** Dario Garcia Gasulla, Artificial Intelligence Associated Researcher, Computer Sciences

Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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