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DEPARTMENT OF
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SEMINAR

2025 SERIES

Rethinking Recommender System's Sustainability and Dataset Diversity

DATE & TIME

10 FEB 2025 (MON) 4:00 – 5:00 PM

VENUE

WLB 202, The Wing Lung Bank Building for Business Studies, Shaw Campus

PROF JOERAN BEEL

Head of the Intelligent Systems Group
University of Siegen, Germany

ABSTRACT

Professor Joeran Beel presents his latest research, exploring two critical yet often overlooked aspects of recommender systems: their environmental impact and the adequacy of dataset selection. His study reveals a striking environmental cost of modern recommender systems, showing that deep learning-based recommender systems generate up to 42 times more CO2 emissions than traditional methods—comparable to the carbon footprint of a long-haul flight. This alarming finding calls for a shift towards more sustainable practices in recommender system research. In addition to addressing the ecological footprint, Beel introduces a novel approach to dataset evaluation with the Algorithm Performance Space (APS), a framework that maps dataset diversity and algorithm performance in a multi-dimensional space. By applying the APS to a wide range of datasets, Beel demonstrates that many commonly used datasets, such as those from Amazon, are too homogeneous to provide meaningful challenges for modern algorithms. His work highlights the need for more diverse datasets and directs researchers toward underexplored, unsolved problems that could drive the next wave of innovation in the field.

SPEAKER'S BIOGRAPHY

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