

Predictive Medicine: Using AI to Uncover Hidden Patterns and Develop Therapies



Speaker: Prof. Dr. Prof. h.c. Andreas Dengel

German Research Center for Artificial Intelligence (DFKI)

Date: Tuesday, November 4, 2025

Time: 15:00–16:30

Venue: Abeno Medix 6F Hall, 1-2-7 Asahimachi, Abeno-ku, Osaka, Japan

Language: English

No registration required. Please bring your business card upon arrival.

Abstract: Personalized medicine is fundamentally transforming biomedical research. Diseases are increasingly viewed as individual conditions, while the development of new therapies has become ever more complex, time-consuming, and costly. Artificial intelligence (AI) offers new opportunities to integrate the rapidly growing volumes of data from genomics, proteomics, and clinical research, accelerating the discovery of medically relevant insights. This talk demonstrates how large language models and biomedical knowledge graphs can be leveraged to better understand complex biological networks, uncover hidden patterns, and identify novel mechanisms of action. At its core lies a globally unique, curated dataset that links sequence information with semantic knowledge about genes, proteins, diseases, and therapeutic compounds. Building on this foundation, we present AI-driven tools designed to predict biological interactions, identify biomarkers, and discover potential therapeutic targets. These developments open new perspectives for data-driven, precise, and efficient drug research—bringing the vision of truly personalized medicine one decisive step closer.

Speaker's Biography:

<https://www.dfki.uni-kl.de/~dengel/indexEng.php>

- Site Representative, DFKI Kaiserslautern
- Leading more than 100 researchers in advanced AI research
- Chair, Flexible Factory Partner Alliance (FFPA), Japan's Ministry of Internal Affairs and Communications initiative
<https://www.ffp-a.org/about/jp-message.html>
- Appointed as Distinguished Honorary Professor, Osaka Prefecture University (2018)
- Recipient of The Order of the Rising Sun, Gold Rays with Neck Ribbon (2021)

Organized by: DFKI Lab Japan

Co-sponsored by: Graduate School of Informatics, Omu

Related Project:

JST ASPIRE (Adopted FY2024)

Formation of a Japan–Germany multilayered research and industrial network on Medical × AI

Principal Investigator: Prof. Koichi Kise, Graduate School of Informatics, Osaka Metropolitan University
<https://aspire-mxai.com/>

Contact:

Rie Mizuno

Project Coordinator

Osaka Metropolitan University

r-mizuno@omu.ac.jp