

Platform Technologies for **AI for Science**: Intelligent Imaging Across Biological Scales



SPEAKER

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DATE & TIME

September 24, 2026 (Thu)
1:00 PM-2:45 PM



VENUE

School of Knowledge
Science, Lecture Hall/
2F KS Lecture Hall



LANGUAGE

English

PROGRAM

1:00 PM – 1:50 PM

Lecture

1:50 PM – 2:05 PM

Q&A

2:10 PM – 2:45 PM

Exchange of
Opinions

ABSTRACT

Artificial intelligence (AI) is transforming science, but its impact depends critically on experimental platforms that generate high-quality, high-dimensional, and actionable data. In this talk, I will present my group's efforts to develop platform technologies for AI for science, focusing on intelligent imaging systems that integrate measurement, computation, and decision-making in real time (Nitta et al, *Cell* 2018; Nitta et al, *Nature* 2026; Wang et al, *Nature Biomedical Engineering* 2026 in press). I will first discuss flow zoometry, a whole-animal analogue of flow cytometry, and its applications in toxicology, genetics, cancer biology, and drug discovery. I will then describe whole-slide edge tomography, an autonomous digital cytopathology platform that enables clinical-grade analysis of cytology specimens. Together, these technologies show how experimental systems can be engineered not merely to collect data, but to function as discovery engines that allow AI to observe, select, perturb, and learn from biological systems across scales. I will discuss how such platforms may accelerate biological discovery, biomedical translation, and the broader emergence of AI-driven science.

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