Speaker 2: Dr. Jumpei Ito

Title 2: Predicting viral fitness, antigenicity, and evolution

Abstract：One of the major challenges in controlling viral infectious diseases lies in the rapid evolution of viruses, which enables them to swiftly alter their virological characteristics. During the COVID-19 pandemic, for example, successive variants with enhanced immune-escape capabilities and increased fitness emerged, making epidemic control extremely difficult. Advancing our understanding—and ultimately our ability to predict—viral evolution and epidemic dynamics could pave the way for more effective strategies to control infectious diseases.

In this seminar, I will introduce CoVFit, an AI model that predicts viral fitness, and PLANT, an AI model that predicts viral antigenicity. Through these examples, I will explore the future of AI for infectious diseases.