

THE GIS SPEAKER SERIES

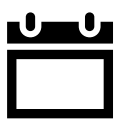


Bridging biology and AI for genome design

Dr. Patrick Hsu

Co-Founder & Core Investigator at Arc Institute, Assistant
Professor of Bioengineering at UC Berkeley

Host: Tim Stuart



Wednesday 13 November 2024
10.00am – 11.00am



GIS Seminar Room (Level 2)
60 Biopolis Street, Genome, Singapore 138672

About The Speaker

Patrick Hsu is Co-Founder of the Arc Institute and Assistant Professor of Bioengineering and Deb Faculty Fellow at the University of California, Berkeley. The Hsu lab works at the intersection of synthetic biology, genomics, and AI to develop technologies for biological programming and design. A pioneer in the field of CRISPR gene editing, Patrick received A.M. and Ph.D. degrees from Harvard University and the Broad Institute. His research has been recognized by MIT Technology Review's Innovators Under 35, the Amgen Young Investigator Award, the NIH Early Independence Award, and the Rainwater Prize for Innovative Early Career Scientist.

About The Seminar

The genome is a sequence that completely encodes the DNA, RNA, and proteins that orchestrate the function of a whole organism. I will discuss two recent advances from the lab: 1) the discovery of RNA-guided recombinases that enable a unified mechanism for the three fundamental DNA rearrangements, expanding the diversity of nucleic acid-guided systems beyond CRISPR and RNA interference, and 2) leveraging advances in machine learning combined with massive datasets of whole genomes to enable a biological foundation model that accelerates the mechanistic understanding and generative design of complex molecular interactions.