

# 学术报告会

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## Artificial intelligence to explore multi-modality molecular data and accelerate biomedical knowledge discovery

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**Founder of the AI-driven Bioinformatics & Biomedicine Group**

### 摘要:

The rapid accumulation of molecular data motivates development of innovative approaches to computationally characterize sequences, structures and functions of biological and chemical molecules in an efficient, accessible and accurate manner. We address this vital need by developing holistic software platforms that can generate features from sequence and structural data for a diverse collection of molecule types. Our freely available and easy-to-use AI platforms can generate, analyse and visualize more than 180 representations for biological sequences, structures and ligands. With the assistance of the AI tools, users can encode their molecular data into representations that greatly facilitate construction of predictive models and analytical studies. In my talk, I will also illustrate how such AI tools can be leveraged to accelerate and paradigm-shifting research in bioinformatics, computational biology, and biomedicine.

### 简介:

Dr. Song is founder and director of the AI-driven Bioinformatics & Biomedicine Group in the Monash Biomedicine Discovery Institute (BDI), Faculty of Medicine, Nursing and Health Sciences, Monash University, Melbourne, Australia. He is a member of the Monash Data Futures Institute, an Associate Investigator of the Australian Research Council (ARC) Centre of Excellence in Advanced Molecular Imaging, a founding member of the Centre to Impact on Antimicrobial Resistance, and a member of the Alliance for Digital Health (ADAM) at Monash University. His lab is interested in tackling biomedical problems with large amounts of data generated by high-throughput techniques that span two strategic research programs, involving both Cancer and Infection and Immunity Programs.

Dr. Song is an Associate Editor or Editorial Board Member of 10 international journals, including Journal of Biomedical and Health Informatics, BMC Bioinformatics, Genomics, Proteomics & Bioinformatics, Frontiers in Bioinformatics, BMC Genomic Data, Computers in Biology and Medicine, Biomolecules, and Advisory Board Member of Current Protein & Peptide Science. In the past five years since 2018, he has published 161 peer-reviewed journal papers in top-tier journals, e.g. Nature Methods, Nature Machine Intelligence, Science Immunology, Science Advances, Nature Communications, Lancet Planetary Health, Nucleic Acids Research, Briefings in Bioinformatics, Cell Reports, PLoS Biology, Genomics Proteomics & Bioinformatics and Bioinformatics.