Adam Damry
Canada Research Chair in Synthetic Biology

Title: Synthetic Biology – Life in Data

Abstract: Synthetic Biology is a field that applies engineering principles to the design and understanding of organisms and biomolecules. These systems are highly complex and are often not completely understood. This lack of understanding stems from the staggering number of interactions occurring within and the astronomical structure space accessible to biomolecules. However, the behaviour of even highly complicated molecules can be predicted from simple chemical and physical principles combined with observations of existing systems. In the Design/Build/Test/Learn cycle of Synthetic Biology, knowledge repositories and modern high-throughput experimental approaches can provide the necessary datasets required to apply big data approaches to optimizing biosystems. These in turn enable an ever more precise control of the function of designer organisms and biomolecules.

In my talk, I will provide an overview of how bio-engineering is carried out today and how AI approaches and tools have been revolutionizing a highly dynamic and rapidly changing field.

Biography: Adam Damry is a Canada Research Chair in Synthetic Biology and joined the University of Ottawa Department of Chemistry in 2022. His research investigates the nature of interactions between proteins and solid elements in their medium, and is currently focused on understanding and diversifying plastic degrading enzymes and developing solid-state sensors for medical and environmental monitoring. He is also Chief Scientific Officer of Australian diagnostics startup Diag-Nose.io, where he is applying his expertise in biosensors to real-world applications in the diagnosis and treatment of chronic rhinosinusitis.