J-BHI Special Issue on "AI-driven Synthetic Biology for Human Wellbeing"

Synthetic biology aims at the rational design and transformation of biological systems, and it is characterized by the integration of traditional biology, engineering, computer science and other disciplines. Synthetic biology has shown great development potential in recent years. However, the biological system is extremely complex, which is difficult to accurately describe by traditional mathematical model. And it is also still unable to effectively predict the complex gene lines. In this background, construction of AI-driven engineering platform is an important research method of synthetic biological system.

With the rapid development of artificial intelligence in recent years, its continuous learning ability based on massive data and intelligent exploration ability in unknown space effectively meet the needs of the current trial and error platform for synthetic biological systems engineering. Through data driven and continuous learning, the deep integration of artificial intelligence and synthetic biology is the general trend, which brings new opportunities for the development of synthetic biology.

In this special issue, we are looking for emerging technologies, novel studies, and promising developments, which can realize and elevate the effectiveness and advantages of AI-driven synthetic biology for human wellbeing.

Topics of interest include, but are not limited to, the following:

- Graph neural network in sythetic biology
- Reinforcement learning in sythetic biology
- Meta learning in sythetic biology
- Explainable AI in sythetic biology
- AI-driven synthetic biology based drug development
- AI-driven synthetic biology based diagnostic techniques
- Construction of AI-driven synthetic biological information database
- AI-driven gene sequence analysis technology
- AI-driven synthetic biology for intelligent health system
- Data classification and clustering in synthetic biology
- AI-driven synthetic biology for vaccine development

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Key Dates

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