

Recurrent Neural Network Encoding Decoding Translator based Prediction Protein Function and Functional Annotation (Conference Paper)

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Abstract

Protein sequences are symbols generally different characters representing the 20 amino acids used in human proteins those sequences can range from the very sort to the very long. There are many proteins database for the sequences are known but the function and functional annotation is not. Protein function prediction (PFP) as well as functional annotation (FA) from its structure or sequence is a major field of bioinformatics at the same time how to judge how well perform these algorithms. We proposed the novel method that converts the protein function problem into a language translation problem by a new proposed protein sequence language encoded to the protein function language decoded and build a recurrent neural machine encoding decoding translator (RNNEDT) based on the recurrent neural networks model. The excellent acting on training, testing datasets exhibits the proposed system as an improving direction for PFP. The proposed system alters the PFP matter to a language translation issue as well as applies a recurrent neural network machine version model for PFP, and visualizes the annotation of biological process (BP), molecular function (MF), as well as cellular component (CP). © 2021 IEEE.

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