

Gene Names Identity Recognition Using Siamese Network for Biomedical Publications

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Abstract : As the quantity of biological articles rises, so does the number of biological route figures. Each route figure shows gene names and relationships. Annotating pathway diagrams manually is time-consuming. Advanced image understanding models could speed up curation, but they must be more precise. There is rich information in biological pathway figures. The first step to performing image understanding of these figures is to recognize gene names automatically. Classical optical character recognition methods have been employed for gene name recognition, but they are not optimized for literature mining data. This study devised a method to recognize an image bounding box of gene name as a photo using deep Siamese neural network models to outperform the existing methods using ResNet, DenseNet and Inception architectures, the results obtained about 84% accuracy.

Keywords : biological pathway, gene identification, object detection, Siamese network

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