Classification of microRNA Using Deep-learning Method

Project report of Computational Genomics Spring 2017

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Abstract

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Keywords: miRNA, Convolution Neural Network, Classification

1 Introduction

State the motivation, the problem you are addressing, and your approach for solving the problem. Use citations to provide a overview of the recent literature. It may be helpful to read a relevant review article.
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some possible topics

- miRNA structure
- miRNA database (introduction of this paper **miRFam: an effective automatic miRNA classification method based on n-grams and a multiclass SVM)**
- sequence recognizion and classification , some methods? CNN in sequence analysis
- Motivation of this project, next step is to classify miRNA sequence into subclasses...

2 Methods

Explain your computational approach. Describe your model and learning/inference methods in two different subsections. Define all variables and include self-sufficient equations.
// TODO: fill this block

- sequence vectorization
- CNN structure for this classification job.

3 Implementation details

Give enough detail so the results can be reproduced by someone familiar with the field. Include a description of data processing steps and how you selected constants and/or free parameters (if applicable). Include pseudocode if implementing a new algorithm.
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3.1 Data Generation

3.2 Sequence Vectorization

3.3 Input Data Processing

3.4 Convolution Neural Networks

4 Results and Conclusions

Provide informative figures and legends, a summary of conclusions, limitations and future directions.
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4.1 Training Record

4.2 Performance

4.3 Discussion and Conclusions

References

[1] hahahaha, haliluya