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Propositions

“Fuzzy Systems and Unsupervised Computing: Exploration of Applications in Biology”

By Fuyu Cai

1. Without a robust background illumination correction, measurements of objects extracted from images are hampered by interference and are not reliable. – *This thesis Chapter 2*
2. A feature should be considered as a sum of every concept serving a human to recognize the world. – *This thesis Chapter 3*
3. Adequate selection of the feature pool is necessary for to improve performance of the recognition. – *This thesis Chapter 3*
4. Prediction from unsupervised learning is constructed from subjective but valuable information. – *This thesis Chapter 4 and 5*
5. A model based on fuzzy logic describes how far a prediction is from ‘truth’. Therefore a fuzzy model is very suitable for integration in a data analysis pipeline for biological information. – *This thesis Chapter 5*
6. The level at which information is processed and the amount of redundancy that remains always competes with the resulting accuracy and computational speed.
7. The interaction of data scientists with biologists is of prime importance; it is the basis to ensure that computational approaches land properly on biological questions.
8. From the Chinese proverb: “you can lead a horse to water, but you can't make him drink”. It is clear that we, PhD students, are only led to “the water”.
9. Thomas Edison said: “If you wish to succeed, you should use persistence as your good friend, experience as your reference; prudence as your brother and hope as your sentry”. Well stated; however, in scientific research there are no gains without pains.
10. Serious but relax, that is the attitude at work and life.

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