Predicting protein secondary structure using an ANN

1. Introduction(Domain, Objectives, Importance, Paper structure)
2. Proteins
   1. Importance in biology
   2. Formation in organisms(Biosynthesis)
   3. Structure
      1. Primary structure
      2. Secondary structure
      3. Tertiary structure
      4. Quaternary structure
   4. Protein databases
3. Artificial intelligence
   1. Brief history
   2. Domains of application
   3. Applications in biology and medicine
4. Protein folding and artificial intelligence
   1. Definition and mechanism
   2. NP-completeness and NP-hardness
   3. The role of CASP
   4. Types of protein structure prediction
      1. Template free modeling
      2. Template based modeling
   5. Methods for determining protein structure
      1. Early non-learning algorithms
         1. Monte Carlo algorithm
         2. Chou Fasman method
      2. Artificial intelligence algorithms
         1. Nearest neighbor
         2. Genetic algorithms
         3. Neural networks
         4. Hybrid methods
   6. Advantages and disadvantages so far
5. Neural network for protein secondary structure prediction
   1. Requirements
   2. Specification
   3. Design
   4. Implementation
   5. Performance
   6. Discussion
   7. Further improvements
6. Conclusions
7. References