



生物科技學系
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羅惟正 助理教授

研究興趣

• 計算結構生物學

在資訊科技的協助下，我們得以深入研究生物分子，如蛋白質和DNA的結構及功能。

我們開發的演算法及系統可應用於藥物設計、蛋白質工程、生質能源生產和環境保育。目前我們實驗室已開發數個先進的生物資訊計算服務和結構生物資料庫，例如 iSARST、CPSARST、CPDB、CPred和DS-SARST，詳見

[Http://10.life.nctu.edu.tw/index.php?p=publications](http://10.life.nctu.edu.tw/index.php?p=publications)

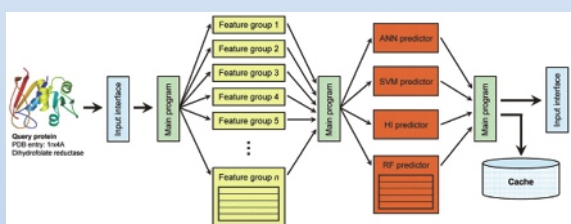


Fig.1 CPred分散式運算蛋白質大數據預測系統

• 醫學與保健

我們發展電腦輔助藥物設計的技術，並專注於開發治療癌症及代謝症候群的抗體藥物。

我們實驗室所開發的系統及資料庫可作為醫學領域研究的參考。此外，羅教授

已講授新陳代謝及保健醫學課程多年，課程綱要可參考

<http://10.life.nctu.edu.tw/index.php?p=researches&c=med>

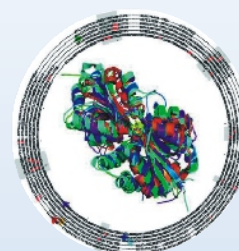


Fig.2 蛋白質環型結構比對系統

• 生態與環境保育

羅教授的終生職志為生態保育與環境保護，多年來致力於相關講學、社會議案與科技研發。

本實驗室的願景在於：

透過我們的專業科學知識，協助整合相關產業與財務資源，以促進全球的生物復育及環境保護。

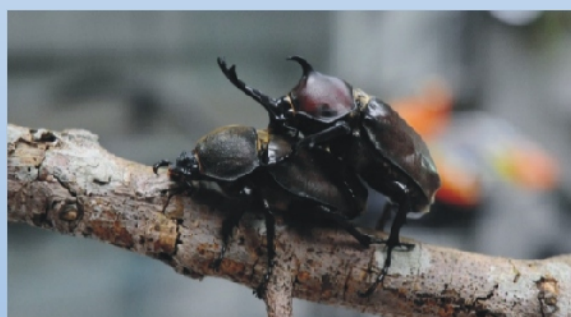


Fig.3 土生昆蟲復育模式生物-獨角仙



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Wei-Cheng Lo, Ph.D.

Research Interests

Our main research field is computational biology and bioengineering, focusing on combining big data analysis and artificial intelligence in computer science with medical and biological researches.

• Computational Structural Biology

With the assistance of computer science, we are exploring the world by studying the structure and function of biological molecules. Our lab is devoted to developing algorithms and computational systems applicable to drug design, protein engineering, biofuel production, and environmental protection.

We have developed several web servers and novel databases of computational biology, such as iSARST, CPSARST, CPDB, CPred and DS-SARST.

For more details, please visit:
<http://10.life.nctu.edu.tw/index.php?p=publications>

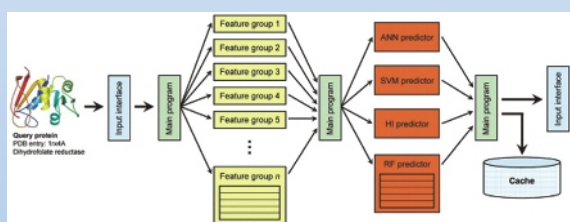


Fig.1 CPred: a distributed artificial intelligence system for predicting protein bioengineering sites

• Medical science and health care

We are interested in computer aided drug design and have focus our energy on the development of antibody-based drugs for cancers and metabolic syndrome. The systems

and databases we developed might be a great help for medical and health research. Besides, Professor Lo, the chief of the lab, has been teaching metabolism and health care for years. The outline can be download from the URL showed below:

<http://10.life.nctu.edu.tw/index.php?p=researches&c=med>

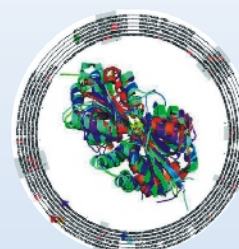


Fig.2 Circularly-permuted protein structural alignment

• Ecology conservation and environmental protection

The lifelong cause of Professor Lo is ecological conservation and environmental protection. Hence, the ultimate goal of the 10Lab is to condense our knowledge and scientific, industrial, and financial resources on species recovery and environment protection.

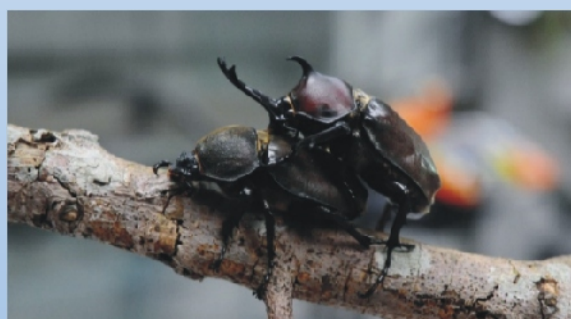


Fig.3 Breeding of saproxylic model organism, *Allomyrina Dichotoma*