

**A Solutions Manual for The Exercises of Ziheng Yang's**  
***Computational Molecular Evolution and Molecular Evolution: A***  
***Statistical Approach***

Sishuo Wang  
Jianhao Lv



*SW dedicates this solutions manual to his grandmother.*  
*JL dedicates this solutions manual to CAU's honors programme.*

## Preface

Typically, solutions to the problems of a book are provided by the original author. However, the present one is different. This is because the time is different: we need a community-driven effort in science education than ever. Also, the books are different. Needless to say, Ziheng Yang's *Computational Molecular Evolution* (CME2006) and *Molecular Evolution: A Statistical Approach* (MESA2014) have influenced generations of people working in molecular evolution.

After nearly 15 years since my first encounter with CME2006, I finally had the chance to solve its problems with invaluable input from my mathematician friend Jianhao Lv: I initially solved all, Jianhao reviewed them and provided alternatives, and the above was repeated until convergence. While I labelled my solutions as "Solution 1" and Jianhao's as alternatives, readers will find his approaches superior, *almost surely*.

Distributed under CC-BY 4.0, the solutions manual also aims to foster collaboration among individuals with diverse backgrounds in tackling biological questions. Like Ziheng, Jianhao, and myself, who enrolled in different programs at China Agricultural University (CAU)—animal sciences, mathematics, and biology—we were brought together by computational molecular evolution. Feedback, alternate solutions, and error reports are welcome via the associated GitHub repository [https://github.com/sishuowang/Solutions\\_Manual\\_CME2006\\_MESA2014/](https://github.com/sishuowang/Solutions_Manual_CME2006_MESA2014/) or email [sishuowang@hotmail.ca](mailto:sishuowang@hotmail.ca). Please cite the GitHub repository for references. I take full responsibility for any errors.

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WANG, Sishuo

*MIC, CUHK*

*Prince of Wales Hospital, Hong Kong*

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