

Annotated Bibliography for a Natural Selection Simulation Study

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References

- [1] Bruce Glymour. Wayward modeling: population genetics and natural selection. *Philosophy of Science*, 73(4):369–389, 2006.

This article goes deep into genetics and population evolution from a sociological and philosophical point of view, which is the theory background I need to ensure my simulation runs on accurate principals of natural selection. It also talks about different models of genetic distribution.

- [2] Alan Kleinman. The basic science and mathematics of random mutation and natural selection. *Statistics in Medicine*, 33(29):5074–5080, 2014.

This article focuses on the mathematics and biological background that I will need to create my simulator. It touches on medicine statistics and parameters I will need to make interactions between the species and genetic inheritance of traits.

- [3] Primer. Simulating natural selection, 2018. Accessed on 24 February 2022, <https://www.youtube.com/watch?v=0ZGbIKd0XrM>.

This was the video that inspired the project. In this video the YouTube channel *Primer* explains the basics principles of genetic traits across population across generations and how a simulation of such can be seen to extract the desired data. This data is then collected to draw conclusions and bring them to real world parallelisms. What I liked the most from this study was not the results, but the research methods and how they were shown.

- [4] Thomas L Vincent and Joel S Brown. *Evolutionary game theory, natural selection, and Darwinian dynamics*. Cambridge University Press, 2005.

This book contains a chapter on game theory development and generation simulations using the basic principles of natural selection and gene trait's evolution and reproduction. I will use it to design the simulation and control parameters. This book takes a computational approach to real world simulation and mathematical systems.

- [5] Uri Wilensky and William Rand. *An introduction to agent-based modeling: modeling natural, social, and engineered complex systems with NetLogo*. Mit Press, 2015.

This book will serve me as a guide to learn how to use the tools that NetLogo offers. Its first few chapters go over the basics of programming in NetLogo, and how this programming language works. I will start with this book to learn how to program two dimensional simulators to see what the capabilities are. After reading and designing the model I will go back to this reference to make sure I write a program as accurate as I can to simulate said model.