

# Information Theory in Biology

A Project Report submitted to IIIT Hyderabad in fulfillment of the requirements for the Entropy and Information course



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## **Abstract**

Short summary of your thesis (max. 250 words) ...

## Acknowledgements

If you want to thank anyone (optional) ...

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# List of Acronyms

FSU Jena    Friedrich-Schiller-Universität Jena

## 1 Introduction

Some of your text. Maybe with an acronym, such as Friedrich-Schiller-Universität Jena (FSU Jena).

## 2 Quantification of Biological Complexity

### 2.1 First Subsection

### 2.2 Second Subsection

Some more of your text. Maybe you want to cite Nels1959<empty citation> or enforce a statement because many have said that before (NeWi1982; Dosi1982; Lund1992; Acem2002). You might want to refer to subsection 2.1, where you defined some important concepts.

## 3 Maximum Entropy Principle in Pharmacokinetics

### 3.1 Pharmacokinetics

Here is a reference to Table 1. In Figure 1, you see ... .

### 3.2 Maximum Entropy Principle

The Maximum Entropy Principle states that when a system has a set of known constraints, the probability distribution that best represents the true distribution is the one that has the maximum entropy.

#### 3.2.1 Application of MEP in Pharmacokinetics

In pharmacokinetics, the Maximum Entropy Principle can be used to model the distribution of

Table 1: GDP per capita	
Country	GDP per capita
Qatar	132,099
Luxembourg	98,987
Singapore	85,253

Source: International Monetary Fund (2015)

### 3.3 Yet another Subsection

If you want to typeset formulas, there is the inline version  $y = x_1^{0.5}x_2^{0.5}$ , centered like this

$$y = x_1^{0.5}x_2^{0.5}$$

		Consideration of use?	
		No	Yes
Quest for fundamental understanding?	High	Pure basic research  Bohr-Quadrant	Use-inspired basic research  Pasteur-Quadrant
	Low		Applied research  Edison-Quadrant

Source: Donald E. Stokes, *Pasteur’s Quadrant: Basic Science and Technological Innovation*, Brookings Institution Press, 1997.

Figure 1: Pasteur’s Quadrant

or numbered:

$$y = x_1^{0.5}x_2^{0.5}$$

(1)

so that you can refer to equation 1 in the text.

3.4 Last Subsection

4 Conclusion

## **A Appendix**

If needed for supplementary material, such as detailed description of data collection, tables, or figures.



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