Day 3 Tutorial: Bayes Part 1

BAMB! Summer School

Tutorial overview

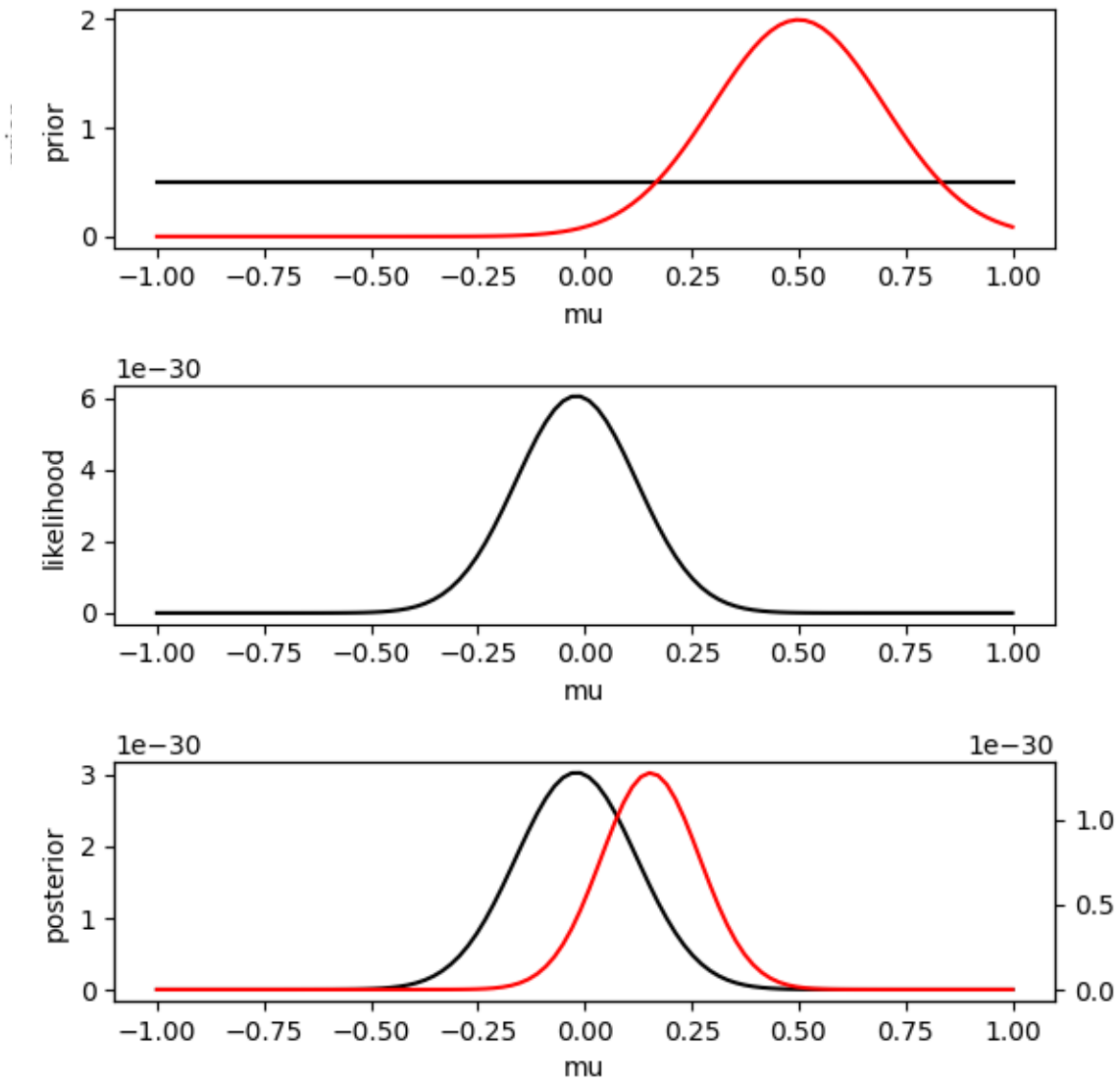
1. Basic Bayes
    a. Bayes theorem
    b. Bayesian Statistics
    c. Using prior knowledge
2. Bayesian Observers
    a. Neural orientation likelihoods
    b. Cardinal prior
    c. Biological implementation

1. Basic Bayes

$$p(A|B) = \frac{p(B|A)p(A)}{p(B)}$$

1. Simple statistics
2. Statistics over distributions
3. Using prior knowledge

1. Basic Bayes



2. Bayesian Observers

$$p(cause|sensations) = \frac{p(sensations|cause)p(cause)}{p(sensations)}$$

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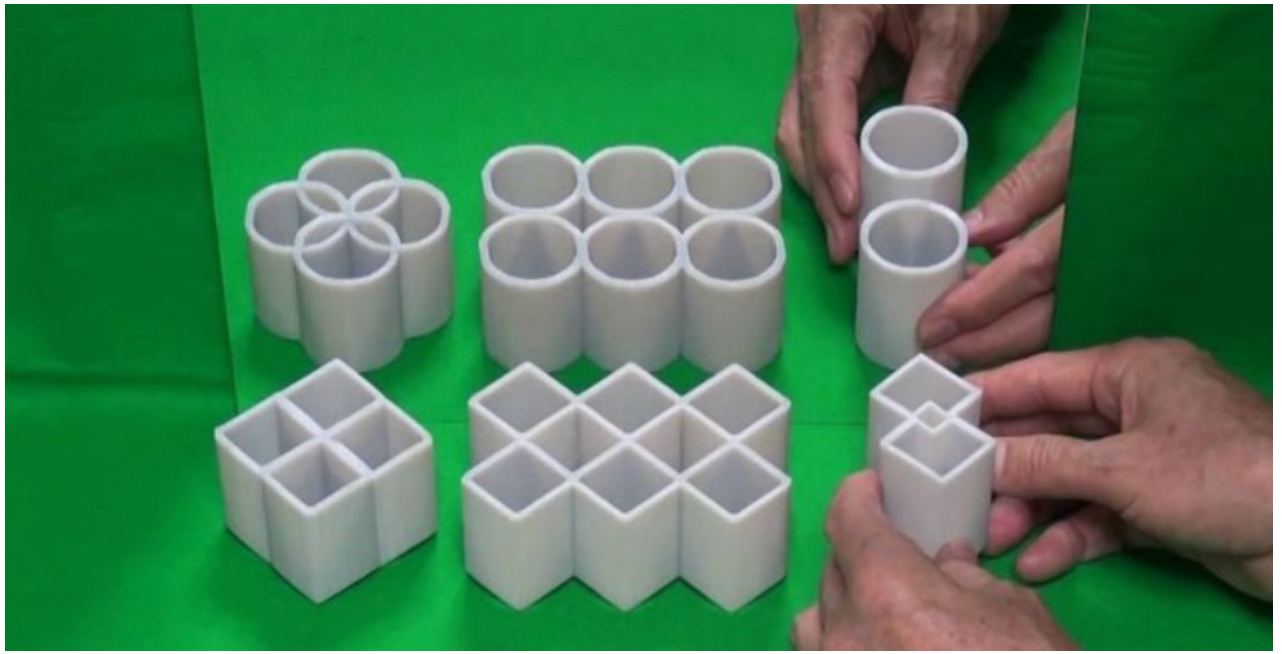
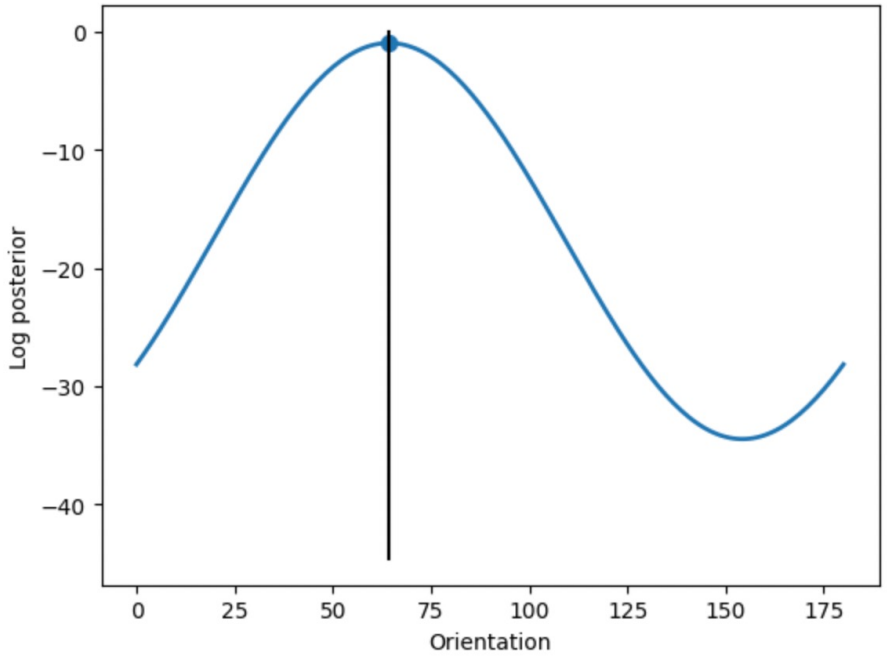
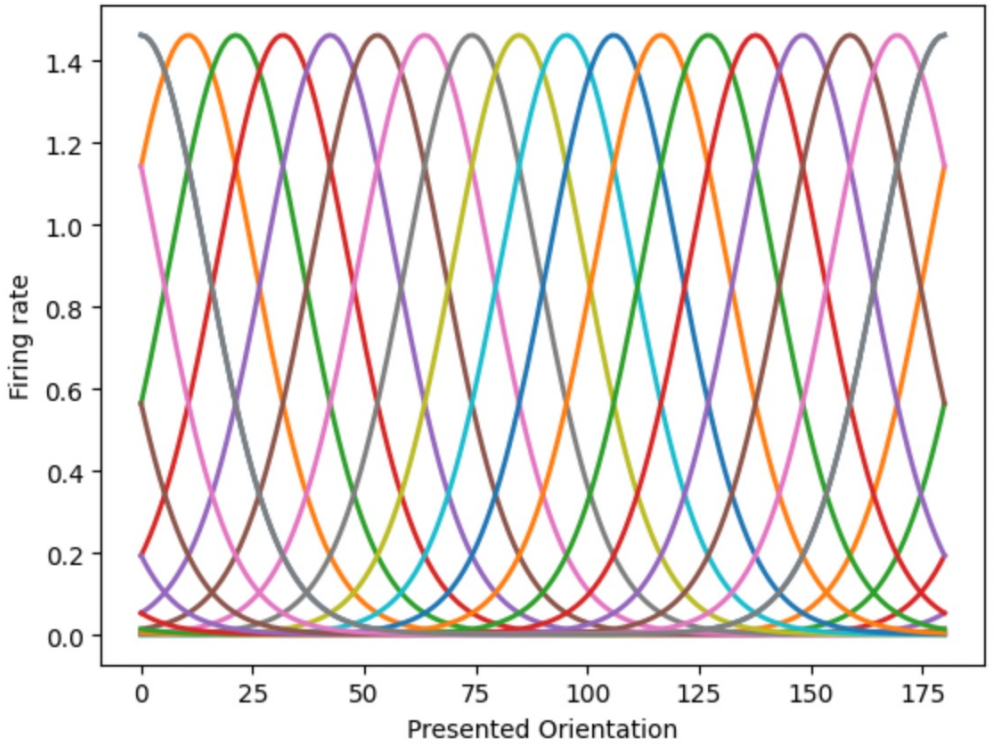


2. Bayesian Observers

$$p(cause|sensations) = \frac{p(sensations|cause)p(cause)}{p(sensations)}$$

Maximum a posteriori





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