Computational Neuroscience: Spike Trains

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Question One

Refractory period = 5ms

- Fano factor with a window of 10ms: 0.7478657136353289
- Fano factor with a window of 50ms: 0.690045618028682
- Fano factor with a window of 100ms: 0.6905282950147962
- Coefficient of Variation: 0.8302338157541044

Refractory period = 0ms

- Fano factor with a window of 10ms: 0.9997076998039605
- Fano factor with a window of 50ms: 0.9854123803165045
- Fano factor with a window of 100ms: 0.9766775321760377
- Coefficient of Variation: 0.9931430811238552

Question Two

- Fano factor with a window of 10ms: 1.0976983910752325
- Fano factor with a window of 50ms: 2.8689606177822626
- Fano factor with a window of 100ms: 3.995012837762081
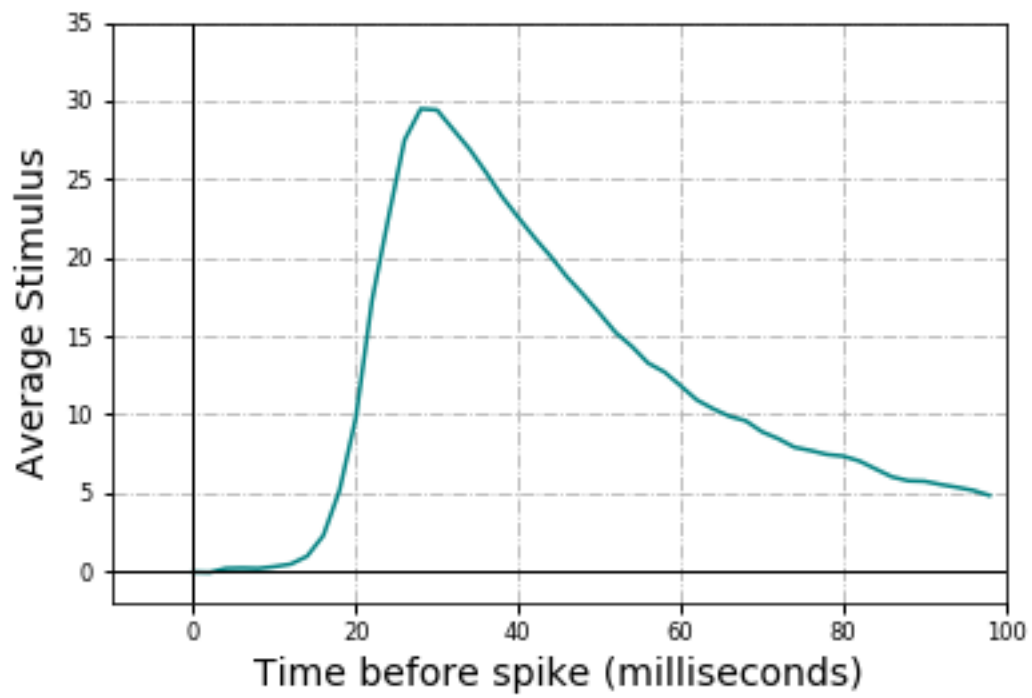- Coefficient of Variation: 2.0085523370640965

Question Three

Figure 1: Spike-triggered average for an interval of 100 milliseconds.