NEURONAL DYNAMICS

What happens in our brain when we make a decision? What triggers a neuron to send out a signal? What is the neural code?

This textbook for advanced undergraduate and beginning graduate students provides a thorough and up-to-date introduction to the fields of computational and theoretical neuroscience. It covers classical topics, including the Hodgkin–Huxley equations and Hopfield model, as well as modern developments in the field such as Generalized Linear Models and decision theory. Concepts are introduced using clear step-by-step explanations suitable for readers with only a basic knowledge of differential equations and probabilities, and richly illustrated by figures and worked-out examples.

End-of-chapter summaries and classroom-tested exercises make the book ideal for courses or for self-study. The authors also give pointers to the literature and an extensive bibliography, which will prove invaluable to readers interested in further study.

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From Single Neurons to Networks and Models of Cognition

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