CHAPTER 14 PROBLEMS AND EXERCISES

Problem 1: What are the main differences between the conventional Fourier Transform and the Short-Time Fourier Transform?

Solution

The conventional Fourier Transform (FT) is described in the textbook Appendix A, Section A.1. The Short Term Fourier Transform (STFT) is treated in the textbook Section 14.3. This section also contrasts the STFT and FT. The reader is encouraged to study these sections and compose an answer showing understanding of the subject.

Problem 2: What are the main differences between the Short-Time Fourier Transform and the Wavelet Transform?

Solution

The Short Term Fourier Transform (STFT) is described in the textbook Section 14.3. The Wavelet Transform is treated in textbook Section 14.4. The reader is encouraged to study these sections and compose an answer showing understanding of the subject.

Problem 3: What are the main differences between the Continuous Wavelet Transform and the Discrete Wavelet Transform?

Solution

The Continuous Wavelet Transform (CWT) is described in the textbook Section 14.4.1. The Discrete Wavelet Transform (DWT) is treated in textbook Section 14.4.2 and 14.4.3. The reader is encouraged to study these sections and compose an answer showing understanding of the subject.

Problem 4: What are the main differences between multi-layer feedforward neural networks and probabilistic neural networks?

Solution

The neural networks are discussed in textbook Section 14.5. The multi-layer feedforward neural networks are treated in textbook Section 14.5.2, whereas probabilistic neural networks are discussed in textbook Section 14.5.4. The reader is encouraged to study these sections, as well as the supporting bibliographic literature and compose an answer showing understanding of the subject.