

EE513
Audio Signals and Systems

Statistical Pattern Classification

Kevin D. Donohue

Electrical and Computer Engineering
University of Kentucky

Interpretation of Auditory Scenes

- Human perception and cognition greatly exceeds any computer-based system for abstracting sounds into objects and creating meaningful auditory scenes. This perception of objects (not just detecting acoustic energy) allows for interpretation of situations leading to an appropriate response or further analyses.
 - Sensory organs (ears) separate acoustic energy into frequency bands and convert band energy into neural firings
 - The auditory cortex receives the neural responses and abstracts an auditory scene.

Auditory Scene

- Perception derives a useful representation of reality from sensory input.
- Auditory Stream refers to a perceptual unit associated with a single happening (*A.S. Bregman, 1990*).

