Respiratory Illness Diagnosis through Time and Spectral Based Sound Analysis

Hady, Joan

In 2008, people in the United States spent about seventeen billion dollars on health care for acute coughs. This project set out to create a program to diagnose Croup, Pertussis and Asthma from the sound of the cough. The program created analyzes the time and spectral qualities of the cough and uses these metrics to classify each cough sound file. The program was successful in diagnosing Asthma and Pertussis, but was initially unable to correctly diagnose Croup, diagnosing it as either Asthma or Pertussis. After testing was completed, the classification algorithm was edited to correctly differentiate Croup, Asthma and Pertussis. The results suggest a promising future for the use of a program, perhaps on a smartphone, as a diagnostic tool for respiratory illnesses.

Awards Won: