Volume 12

Washington University
Undergraduate Research Digest

Spring 2017

Automatic Sleep Stage Classification Using a Neural Network Algorithm

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Automatic Sleep Stage Classification Using a Neural Network Algorithm

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For this project I developed and tested a neural network algorithm for the purpose of performing automatic sleep stage classification. Sleep is typically classified into five different stages: wake, N1, N2, N3/N4, and REM (rapid eye movement). The classification is based on various standards set by the American Academy of Sleep Medicine (AASM) and requires a trained sleep technician. I wrote a neural network algorithm to perform classification based on these standards, thus making the process automatic. The neural network algorithm was developed by improving and building on previous iterations, the final result being a classifier capable of discriminating between five different classes with 80.82% accuracy.