



CALIFORNIA STATE SCIENCE FAIR 2014 PROJECT SUMMARY

Name(s) Thomas M. Rodrigue	Project Number 34597
Project Title Did You Catch That?	
Objectives/Goals Human and computer interactions are becoming increasingly common, and as a student very interested in robotics and technology, I decided to test children ages eleven to thirteen to try to determine how well the speech recognition software, #Siri#, might work for complete sentences versus isolated words, and whether accuracy might differ for certain types of words. Abstract Methods/Materials In order to conduct this study, I needed an iPhone, a decibel meter, a video recorder, and forty participants ages 11 to 13. Participants were asked to give ten one sentence commands to the voice recognition software, then read eight words starting with unvoiced sounds, and finally read eight words beginning with voiced sounds. I hypothesized that the accuracy of the software would be very high in the commands portion of the test. I believed that the accuracy rate would be much lower when the system was asked to transcribe isolated words. Furthermore, I predicted that the words starting with voiced sounds would be interpreted more accurately than those starting with unvoiced sounds. Voiced sounds are ones that vibrate the vocal chords significantly, while unvoiced sounds are ones that do not vibrate the vocal chords significantly. Results Analysis of the data showed that the voice recognition software understood 92% of the commands portion of the test across all participants. There was a dramatically lower accuracy for words spoken in isolation. Words beginning with voiced sounds were interpreted correctly 48% of the time, while words beginning with unvoiced sounds were interpreted correctly only 41% of the time. Conclusions/Discussion According to my results, the voice recognition software showed much greater accuracy in deciphering complete sentences than identifying isolated words. When isolated words were presented, this project also revealed a significant difference between the recognition of voiced versus unvoiced sounds.	
Summary Statement I designed a project to test speech recognition software accuracy, "Siri", for complete sentences versus isolated words.	
Help Received First, I would like to thank the participants for your help in my project, without you I would not be able to conduct my experiment. I would also like to thank my science teacher for being so interesting and and always being willing to help me. Finally, I would like to thank my parents for always helping me when I	