

# Speech Synthesis System by Lip Motion to Help Acquired Voice Disorders Speak Again

唇の動きによる後天的発話障害者が発話できる音声合成システムの研究

Student No.: 201821644

Name: Chen Yaohao

At present, there are still many acquired voice disorders in Japan, and their communication with others is still inconvenient. To solve this problem, this work proposes a first sentence-level lip reading system for acquired voice disorders in Japanese. This study explores the possibility of using deep learning to perform lip reading as a communication approach for acquired voice disorders in Japanese. This work proposes a data collection system running on a smartphone to facilitate users to collect training data and reduce the time of data collection, and uses Convolution Neural Network to filter malicious data. This work builds a lip reading app that runs on smartphone for acquired voice disorders as a means of communication. For the data collection system, two Convolution Neural Network models were tested in the experiment, and the results show that it can effectively filter non-lip malicious data. This study collected training data and test data from acquired voice disorders and non-acquired voice disorders. Four deep neural network models for lip reading were tested. The results show that high accuracy can also be achieved with limited data, showing the effectiveness of lip reading for acquired voice disorders and in Japanese.

Academic Advisors: Principal: Yoichi OCHIAI

Secondary: Masahiko MIKAWA