1 Abstract

2 Introduction

The use of neural networks presents a new way of event detection in eye-tracking-data. Zemblys presents gazeNet as one of the first approaches in the application of the technology.

3 gazeNet

Our gazeNet architecture was inspired by Deep Speech 2, an end-to-end speech recognition neural network (Amodei, Anubhai, Battenberg, Case, Casper, Catanzaro, . . . , Zhu, 2015). gazeNet was implemented using the pyTorch6 neural network framework (version 0.2.0 4) and the starter code from Sean Naren.7 Our network has two convolutional layers followed by three bi-directional recurrent layers with a fully connected layer on top. The convolutional layers use 2D filters with a size of 2 x 11 and are meant to extract deep features from raw input data, while the recurrent layers model event sequences and are responsible for detecting onsets and offsets of fixations, saccades and PSOs. Zemblys et al. [2018]

3.1 Update to Python 3

3.2 Platform Independence

3.3 Validation

4 Conversion script

References

Raimondas Zemblys, Diederick C Niehorster, and Kenneth Holmqvist. gazenet: End-to-end eye-movement event detection with deep neural networks. *Behavior research methods*, 2018.