

*Poster Presentation:* #P10  
*Name of Student:* ZHENG Yueyuan Mercury (PhD/Y1)  
*Name of Primary Supervisor:* Dr Janet HSIAO

**Eye movement pattern and consistency predict passage reading performance of English as Second Language (ESL) Learners**

Although eye movements reflect cognitive processes involved in reading, whether eye movements predict passage reading performance in addition to language proficiency and general cognitive abilities remains unclear. Through Eye Movement with Hidden Markov Model (EMHMM), we discovered that an eye movement pattern involving more horizontal saccades predicted faster reading speed in addition to language proficiency and executive function. Also, higher English proficiency predicted faster reading speed through the mediation of this eye movement pattern. In contrast, reading comprehension accuracy could be predicted by a more consistent eye fixation in the beginning of reading engagement in addition to verbal working memory. This effect may be because higher fixation consistency indicates a better developed visual routine as a result of reading expertise. Thus, eye movement pattern and consistency predicted different aspects of reading performance. This finding has important implications for ways to assess or facilitate ESL learners' reading through eye movement measures.