User screen

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Automatic writing evaluation system

- A user (English learner) writes an essay.
- The system provides:
 - 1. Language proficiency level
 - 2. Essay score
 - 3. Grammar error correction
 - 4. General feedback
- Proficiency and Score are based on essay's *complexity, fluency*, and *accuracy* features.
 - 1. Complexity: not visible for the user
 - 2. Fluency: not visible for the user
 - 3. Accuracy: included in feedback

1920×1080

User screen – system results

Grammar error correction

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Proficiency level: B2 Score: 78

Feedback Voluptate velit esse cillum dolore eu fugiat nulla

Automatic writing evaluation system

- Generally usuful in the classroom situation (e.g. grading, placement test)
 - Possible collaboration with English Language Institute @UBC
- Not computer aided writing (e.g. Grammarly) but it can work for helping writing, too.

1920×1080

User screen – system results

Grammar error correction

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Proficiency level: B2
Score: 78

Feedback Voluptate velit esse cillum dolore eu fugiat nulla

Introduced techniques:

- **Transformer**-based classification: proficiency level and score
- Seq2seq for accuracy features
- Language modelling for fluency
- Language generation technique for feedback (2022-2023)

Current state:

- Implemented classification features (quantatitive and qualitative complexities including syntactic *complexity*)
- Language modeling (*fluency*)
- Seq2seq (accuracy) & spelling check is in process
- Lnaguage generation is in preparation
- Web interface is also in = (Student internship@UBC, Summer 2022)

references

- Lim, K., Song, J., & **Park, J.** (Accept with revision, March 2022) Neural automated writing evaluation for Korean L2 writing (submitted to *Natural Language Engineering, Cambridge University Press*).
- Qiu, M., & Park, J. (2019). Artificial Error Generation with Fluency Filtering. *Proceedings of the 14th Workshop on Innovative Use of NLP for Building Educational Applications (BEA2019)*, 87–91. https://doi.org/10.18653/v1/W19-4408
- Qiu, M., Chen, X., Liu, M., Parvathala, L. S. K., Patil, A., & **Park, J.** (2019). Improving Precision of Grammatical Error Correction with Cheat Sheet. *Proceedings of the 14th Workshop on Innovative Use of NLP for Building Educational Applications (BEA2019)*.