Sentiment Analysis in Peer Review

by

For the Ph.D. degree in Computer Science and Engineering

Sentiment analysis has recently been used to determine the mood of students, teacher strengths and weaknesses, student perception of internship experience, or to predict student attrition. While these are helpful indicators of students' experience, none improve the information gathered from or the reliability of peer review. Peer review is particularly important in large courses with complex assignments (e.g., essays, software projects, and presentations) where scalable grading is requisite. In this dissertation, we apply sentiment analysis not on an assignment itself, but on the review text generated from a peer-reviewing crowd to produce a quantitative sentiment score. To obtain a reliable score, we first mined peer review comments to compile our lexicon, HeLPS, which exhibits high precision on peer review text compared to others publicly-available. From the lexicon, we built an aspect extractor to aggregate and understand student feedback. Our sentiment analysis algorithm, SentiSoft, leverages both the lexicon and aspect extractor to provide a fine-grained sentiment score with metrics and supporting documentation from text alone for the improvement of scalable assessment.

Examining Committee

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Friday, May 29 2020
10:00 AM
Online (Collaborate Ultra)
Please email for more information
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THE PUBLIC IS INVITED

Publications

1) and L. A. Piegl, "A Domain-Dependent Lexicon to Augment CAD Peer Review". Accepted in Computer-Aided Design and Applications. 2020.
2) A. Friedman and , "Developing a Grading Scale Rubric for an R Class". Accepted in Proceedings of the R User Conference. 2020.
3) and L. A. Piegl, "HeLPS: A Domain-Specific Lexicon for CAD Peer Review". Accepted in Proceedings of CAD'20. 2020.
4) , A. Friedman, L. A. Piegl, and P. Rosen, "Leveraging Peer Feedback to Improve Visualization Education". Accepted in PacificVis 2020: IEEE Pacific Visualization Symposium. 2020.
5) L. A. Piegl, L. A. Piegl, [illegible] Proceedings of CAD'19. 117-121. 2019.
8) , L. A. Piegl, and P. Rosen, "Ten challenges in CAD cyber education. Computer-Aided Design and Applications". Vol. 15, Iss. 3, 2018.

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