College of Engineering and Computer Science
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Announces the M.S. Thesis Defense of

Rishabh Lingam

for the degree of Master of Science (M.S.)

A STUDY ON SENTENCE-LEVEL ARGUMENT IDENTIFICATION IN IMBALANCED STUDENT ESSAY CORPORA

3rd July 2025, 15:00
Engineering East Building, Room EE-405
777 Glades Road
Boca Raton, FL

DEPARTMENT: Department of Electrical Engineering and Computer Science

ADVISOR: Dr. Xingquan Zhu

M.S. SUPERVISORY COMMITTEE: Dr. Abhijit Pandya, Dr. Borko Furht, Dr. Sipai Klein, Dr. Wendy Hinshaw

ABSTRACT OF THESIS

Writing is an essential skill that affects success in nearly every academic subject and professional field. For undergraduate students, strong writing helps them organize ideas, communicate clearly, and perform better in both written assignments and overall coursework. Good writing also supports critical thinking, which is key to problem-solving and academic growth. Beyond school, writing continues to be important in the workplace, where it is used for emails, reports, presentations, and formal documents. Yet, despite its importance, many students and graduates do not have strong writing skills, and this gap is noticed by employers. A recent survey by Ashley Finley [1] found that while 90% of employers value written communication, only 44% believe graduates are prepared.

At the same time, recent progress in artificial intelligence has made tools like neural language models useful for supporting writing instruction and grading. These models offer faster and more objective ways to assess student writing. In this study, we explore how automated writing assessment can work at the sentence level, focusing on Writing Across the Curriculum (WAC) categories used in College Writing 1 and 2 at Florida Atlantic University. We collected final argumentative essays written by students and analyzed them using a neural language model to assess writing quality both sentence by sentence and across the whole essay. Our findings show that the model can recognize patterns in writing and provide useful evaluations, but there are still problems with consistency in scoring. This research shows possible improvements to address these issues and highlight key takeaways from the case study that support using sentence-level assessment in writing instruction.

BIOGRAPHICAL SKETCH

Rishabh Lingam is a graduate student in the Master of Science program in Artificial Intelligence at Florida Atlantic University, where he also serves as a Research and Teaching Assistant. His academic focus lies in natural language processing, generative modeling, and machine learning applications in education and heritage restoration. His recent work includes fine-tuning Transformer-based models for automated essay evaluation, contributing to consistency in AI-assisted writing assessments. His research has been published in IEEE ICKG 2024, The Georgia Tech ConCave Ph.D. Symposium 2024 and SIGraDi 2024. Prior to graduate study, he earned a B.Tech. degree in Electronics and Communication Engineering from Malaviya National Institute of Technology. Rishabh has also held roles in industry as a Business Analyst at Genpact and has contributed to open-source projects. He is a member of IEEE, ACM, and Tau Beta Pi.

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CONCERNING PERIOD OF PREPARATION
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Published Papers:

Language Modeling for Sentence Level Assessment: A Case Study of First-Year English Composition IEEE ICKG 2024