



#### Automatic Exam Marking Project

**Essay Dataset Generation** 

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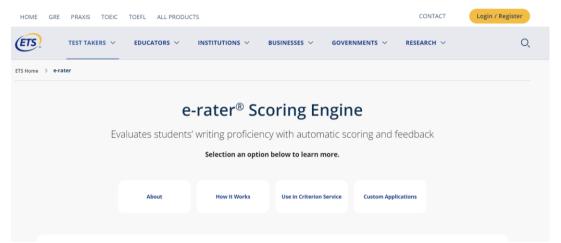
**Essay Scoring Tasks** 

# Task 1: Preparing Project Management Plan (PMP)

- Project Documentation Plan
- Project Monitoring
- Project Scope
- Project Risk Management
- Project Resource Management
- Project Stakeholder Management



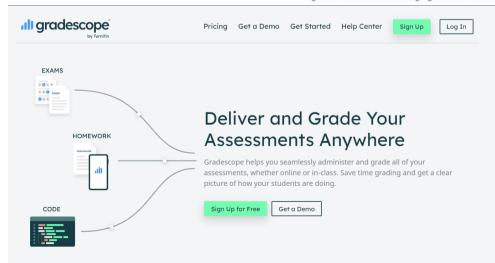
### Task 2: Research the Commercial Tools





eMetric's Deep Learning Essay Scoring (DLES) engine uses the latest innovations in natural language processing techniques to formulate contextual representations of words, sentences, and paragraphs to provide reliable and accurate essay scores.

The DLES engine is based off of models of language trained with huge corpuses of text, such as all of Wikipedia and hundreds of thousands of books. The DLES engine fine-tunes its model of language to understand how to score student essays through a training process involving hundreds of thousands of student essays.



ficial intelligence techniques which enable it to understand language in more nuanced ways than choften rely on simple statistics such as word counts, counting similar words between essays, and ES engine can already outperform traditional AES models, and we are actively developing and





## Task 3: Existing GAN For Generation AWaillalolle Source Essay DataSet

Research and Code Analysis

Park, Y. H., Choi, Y. S., Park, C. Y., & Lee, K. J. (2022). EssayGAN: Essay Data Augmentation Based on Generative Adversarial Networks for Automated Essay Scoring. Applied Sciences, 12(12), 5803.

## Task 4: Existing ML for Essay Scoring

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	ML Approach	Name	Cited as	Source Code
SOUTH	Regression	Flexible domain adaptation for automated essay scoring using correlated linear regression	Phandi, P., Chai, K. M. A., & Ng, H. T. (2015, September). Flexible domain adaptation for automated essay scoring using correlated linear regression.  In Proceedings of the 2015 Conference on Empirical Methods in Natural Language Processing (pp. 431-439).	
	Regression	EASE	Commercial	https://github.com/openedx-unsupported/ease
	Neural Network	A neural approach to automated essay scoring.	Taghipour, K., & Ng, H. T. (2016, November). A neural approach to automated essay scoring. In Proceedings of the 2016 conference on empirical methods in natural language processing (pp. 1882-1891).	GitHub - nusnlp/nea: Neural Essay Assessor: An Automated Essay Scoring System Based on Deep Neural Networks
	Neural Network	Automated scoring for reading comprehension via in-context bert tuning.	Fernandez, N., Ghosh, A., Liu, N., Wang, Z., Choffin, B., Baraniuk, R., & Lan, A. (2022, July). Automated scoring for reading comprehension via in-context bert tuning. In Artificial Intelligence in Education: 23rd International Conference, AIED 2022, Durham, UK, July 27–31, 2022, Proceedings, Part I (pp. 691-697). Cham: Springer International Publishing.	https://github.com/ni9elf/automated- scoring
	Classification	Effective feature integration for automated short answer scoring	Sakaguchi, K., Heilman, M., & Madnani, N. (2015). Effective feature integration for automated short answer scoring. In Proceedings of the 2015 conference of the North American Chapter of the association for computational linguistics: Human language technologies (pp. 1049-1054).	
	Classification	A hierarchical classification approach to automated essay scoring	McNamara, D. S., Crossley, S. A., Roscoe, R. D., Allen, L. K., & Dai, J. (2015). A hierarchical classification approach to automated essay scoring. Assessing Writing, 23, 35-59.	