

Group 73 Final Report: Wildfire Detection Classification Plan

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1 Introduction

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2 Dataset

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3 Features and Inputs

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4 Implementation

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5 Evaluation

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6 Progress

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7 Error Analysis

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Data Description: missing class distribution details

Implementation: missing architectural details
Evaluation: limited error analysis, missing ROC/AUC

Feedback and Next Step: no strategy for addressing false negatives.

Sapna: Overall, good work!

Team Contributions

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References

- [1] National Aeronautics and Space Administration. 2025. Wildfires and climate change. Web page. Available at <https://science.nasa.gov/earth/explore/wildfires-and-climate-change/>. Accessed: 2025-11-09.
- [2] Alfred V. Aho and Jeffrey D. Ullman. 1972. *The Theory of Parsing, Translation and Compiling*, volume 1. Prentice-Hall, Englewood Cliffs, NJ.
- [3] Arize AI. 2023. Binary cross entropy: Where to use log loss in model monitoring. <https://arize.com/blog-course/binary-cross-entropy-log-loss/>. Published January 30 2023.
- [4] American Psychological Association. 1983. *Publications Manual*. American Psychological Association, Washington, DC.
- [5] Galen Andrew and Jianfeng Gao. 2007. Scalable training of L1-regularized log-linear models. In *Proceedings of the 24th International Conference on Machine Learning*, pages 33–40.
- [6] Health Canada. 2024. Human health effects of wildfire smoke — report summary. Web document. Available at <https://www.canada.ca/en/services/health/healthy-living/environment/air-quality/wildfire-smoke/human-health-effects-report-summary.html>. Accessed: 2025-11-09.
- [7] Ashok K. Chandra, Dexter C. Kozen, and Larry J. Stockmeyer. 1981. *Alternation*. *Journal of the Association for Computing Machinery*, 28(1):114–133.
- [8] Dan Gusfield. 1997. *Algorithms on Strings, Trees and Sequences*. Cambridge University Press, Cambridge, UK.
- [9] Mohammad Sadegh Rasooli and Joel R. Tetreault. 2015. *Yara parser: A fast and accurate dependency parser*. *Computing Research Repository*, arXiv:1503.06733. Version 2.
- [10] Laxita Soontha and Mohammad Younus Bhat. 2026. *Global firestorm: Igniting insights on environmental and socio-economic impacts for future research*. *Environmental Development*, 57. Accessed: 2025-11-10.