**Lung Cancer Prediction through K-Nearest Neighbors Algorithm**

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*Abstract*— Lung cancer is one of the most lethal diseases on to this planet, around 23,8,340 people dead due to lung cancer in the year 2023. One of the main reasons for death caused by lung cancer is late diagnosis. Cancer which is diagnosed in early stage can be treated and may helpful to reduce the percentage of death. Factors including age, gender, smoking habits, exposure to air pollution, workplace hazards, as well as other lifestyle and health aspects can help us in early diagnosis of cancer. Correlation between these factors is analysed using machine learning classification technique i.e. KNN.

Keywords—– Lung Cancer, KNN algorithm, Prediction, Classification

# Introduction (*Heading 1*)

Lung cancer is a deadly disease with a high mortality rate, often due to late diagnosis. Early detection is crucial for effective treatment and reducing the number of deaths. This study utilizes the K-Nearest Neighbours (KNN) algorithm, a machine learning technique, to predict lung cancer based on factors such as age, gender, smoking habits, air pollution exposure, and lifestyle aspects. By analysing the correlation between these factors, the aim is to facilitate early diagnosis and improve survival rates for lung cancer patients.

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Identify applicable funding agency here. If none, delete this text box.

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*a**b* 

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## Some Common Mistakes

* The word “data” is plural, not singular.
* The subscript for the permeability of vacuum **0, and other common scientific constants, is zero with subscript formatting, not a lowercase letter “o”.
* In American English, commas, semicolons, periods, question and exclamation marks are located within quotation marks only when a complete thought or name is cited, such as a title or full quotation. When quotation marks are used, instead of a bold or italic typeface, to highlight a word or phrase, punctuation should appear outside of the quotation marks. A parenthetical phrase or statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.)
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An excellent style manual for science writers is [7].

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1. Table Type Styles

| Table Head | Table Column Head | | |
| --- | --- | --- | --- |
| Table column subhead | Subhead | Subhead |
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The preferred spelling of the word “acknowledgment” in America is without an “e” after the “g”. Avoid the stilted expression “one of us (R. B. G.) thanks ...”. Instead, try “R. B. G. thanks...”. Put sponsor acknowledgments in the unnumbered footnote on the first page.

##### References

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1. G. Eason, B. Noble, and I. N. Sneddon, “On certain integrals of Lipschitz-Hankel type involving products of Bessel functions,” Phil. Trans. Roy. Soc. London, vol. A247, pp. 529–551, April 1955. *(references)*
2. J. Clerk Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68–73.
3. I. S. Jacobs and C. P. Bean, “Fine particles, thin films and exchange anisotropy,” in Magnetism, vol. III, G. T. Rado and H. Suhl, Eds. New York: Academic, 1963, pp. 271–350.
4. K. Elissa, “Title of paper if known,” unpublished.
5. R. Nicole, “Title of paper with only first word capitalized,” J. Name Stand. Abbrev., in press.
6. Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, “Electron spectroscopy studies on magneto-optical media and plastic substrate interface,” IEEE Transl. J. Magn. Japan, vol. 2, pp. 740–741, August 1987 [Digests 9th Annual Conf. Magnetics Japan, p. 301, 1982].
7. M. Young, The Technical Writer’s Handbook. Mill Valley, CA: University Science, 1989.

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