

# Overview on Open-Source Multimodal Deep Learning Methods used For Lung Cancer Survival Prognosis

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## Abstract

*Background and Aim:* The recent surge in data availability from various life science domains and the latest development of deep learning algorithms allow the use of these heterogeneous data combined. These multimodal data are an enabler of cancer research whereby the character of data heterogeneity would allow a better performance of multimodal deep learning algorithms. An application of this analysis is targeted to lung cancer survival prediction. *Materials and Methods:* The latest literature exposes multimodal deep learning solutions as the next step in integrating and analyzing heterogeneous data. This article provides an overview on existing open-source deep learning algorithms applied on multimodal datasets for lung cancers survival prediction. The study was done on PubMed Central and comprised 53 articles. *Results:* From the selected articles we remark a great diversity of datasets types ranging from image types to omic data and very different algorithmic architectures. *Conclusions:* Major steps are marked for multimodal deep learning and it is still necessary future work to exploit its full potential.

**Keywords:** Multimodal; Deep learning; Lung cancer; Open-source GitHub

