#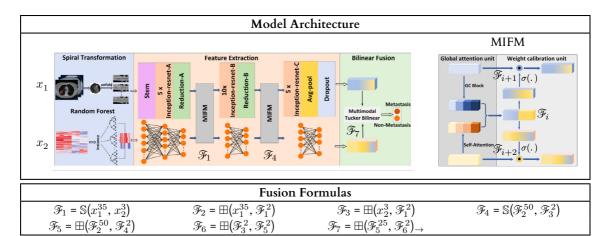 9 Deep learning approach for predicting lymph node metastasis in non–small cell lung cancer by fusing imagegene data [9]

Model Architecture

Fusion Formulas

$$\mathcal{F}_1 = \mathbb{S}\big(x_1^{35}, x_2^3\big) \qquad \mathcal{F}_2 = \boxplus\big(x_1^{35}, \mathcal{F}_1^2\big) \qquad \mathcal{F}_3 = \boxplus\big(x_2^3, \mathcal{F}_1^2\big) \qquad \mathcal{F}_4 = \mathbb{S}\big(\mathcal{F}_2^{50}, \mathcal{F}_3^2\big)$$

$$\mathcal{F}_5 = \boxplus\big(\mathcal{F}_2^{50}, \mathcal{F}_4^2\big) \qquad \mathcal{F}_6 = \boxplus\big(\mathcal{F}_3^2, \mathcal{F}_5^2\big) \qquad \mathcal{F}_7 = \boxplus\big(\mathcal{F}_5^{25}, \mathcal{F}_6^2\big)_{\rightarrow}$$

Fusion Graph Representation	Fusion Analysis	
	How Many: Single or Multiple?	Multiple, 7
	Number of Fusion Flows	1
	Multiple Type Sudden, Gradual or Multi-Flow?	Sudden
	|Sudden| Synchro?	No