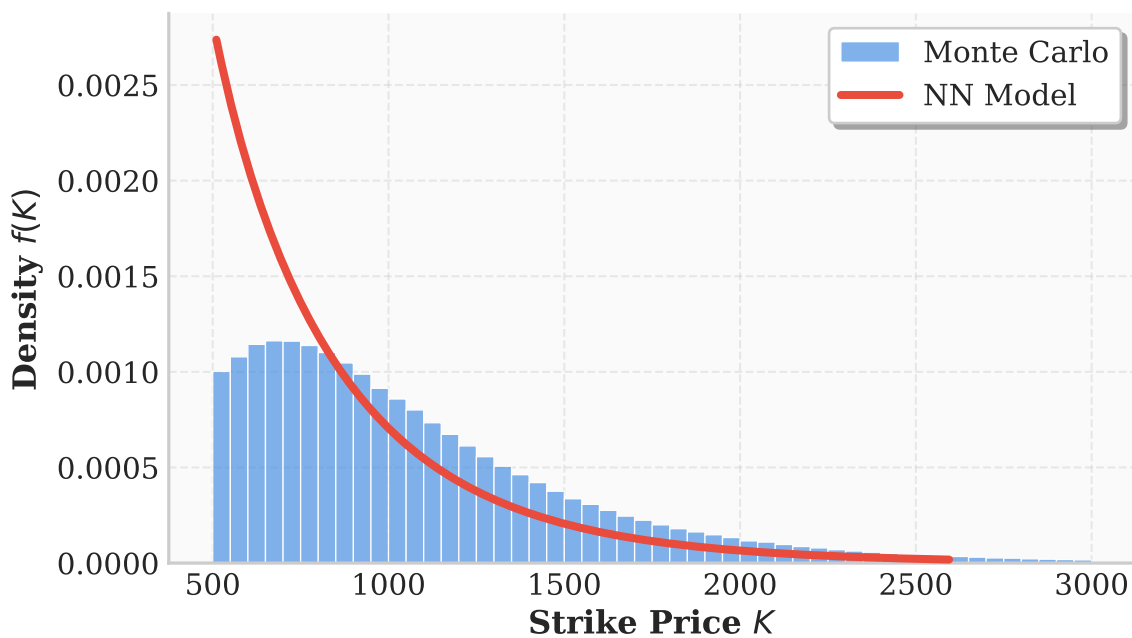


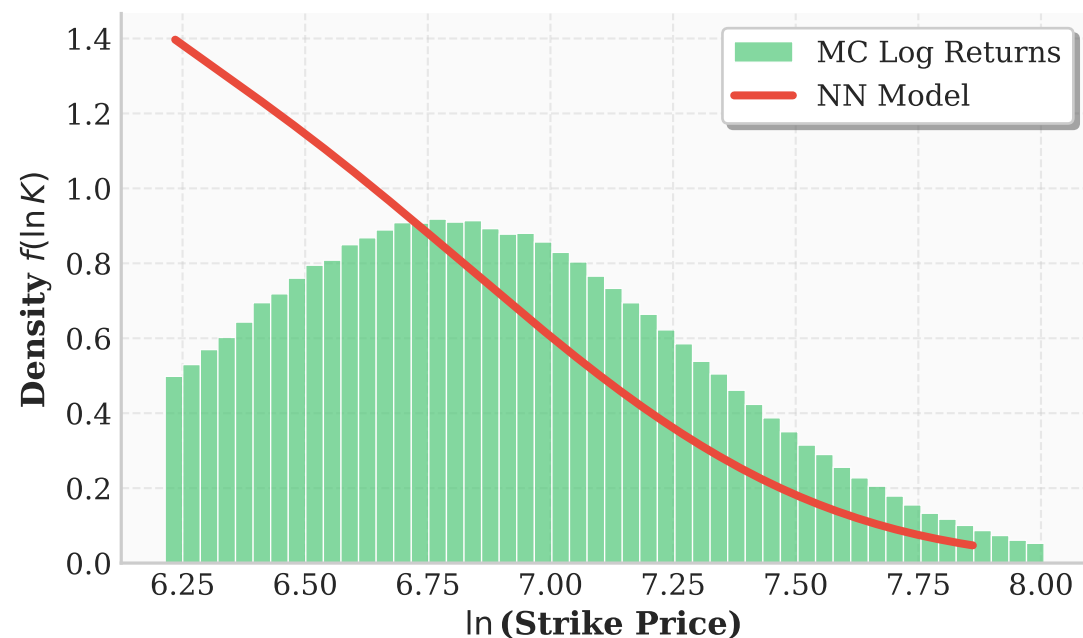
# PDF Analysis: Neural Network Synthetic Local Volatility Model

## Monte Carlo with $dS_t = rS_t dt + \sigma_{NN}(t, S)S_t dW_t$

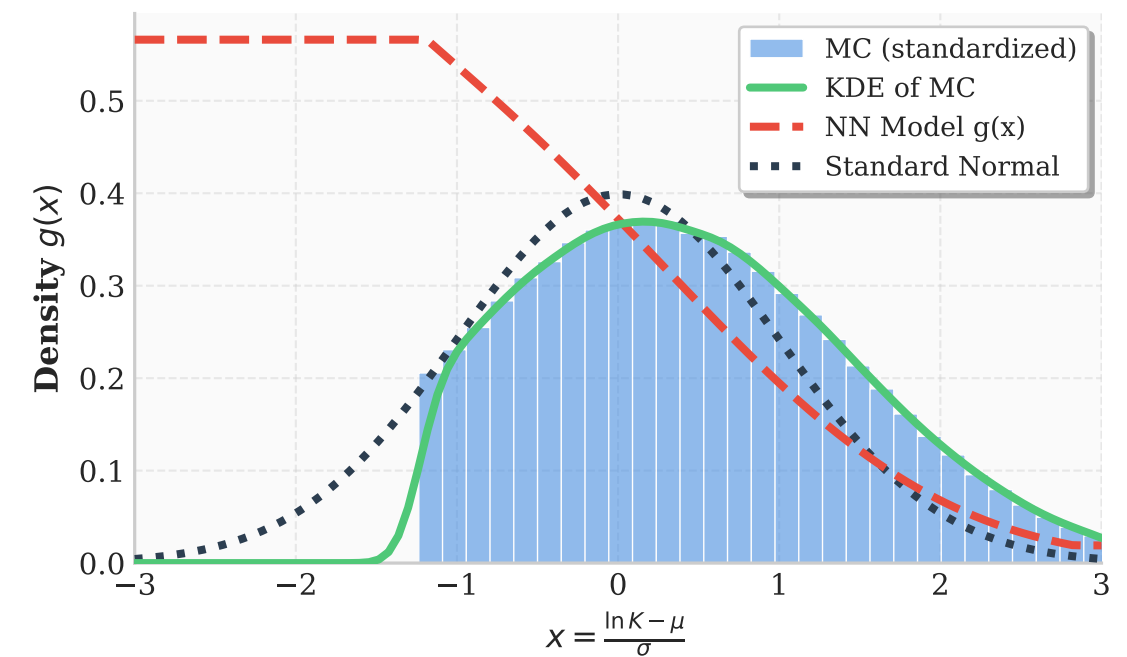
Strike Distribution (T = 0.25)



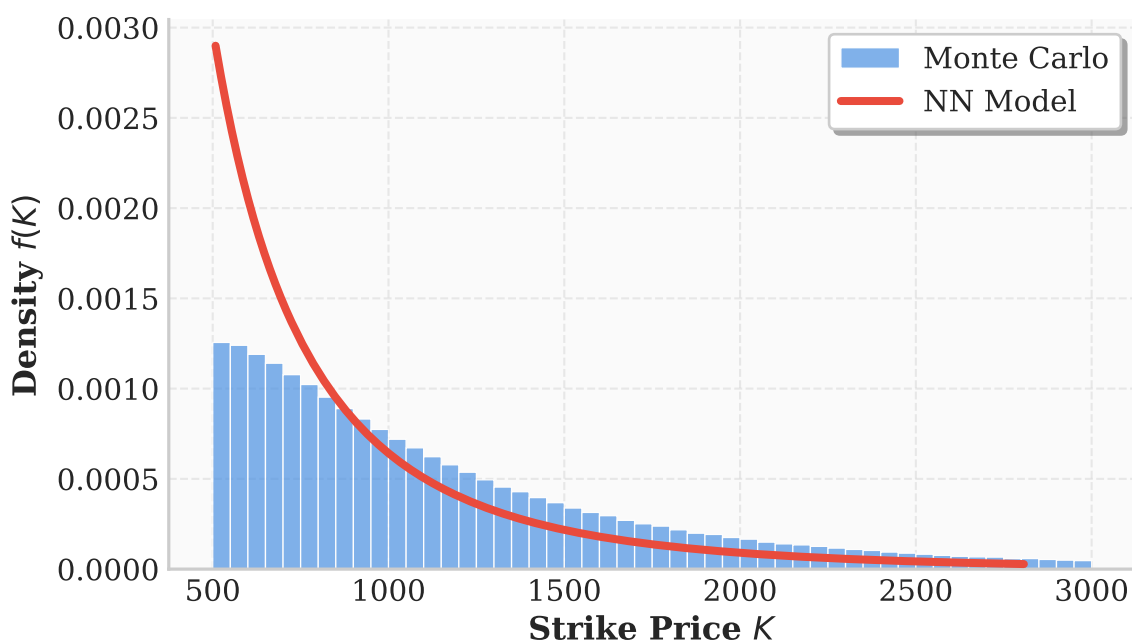
Log-Normal Distribution (T = 0.25)



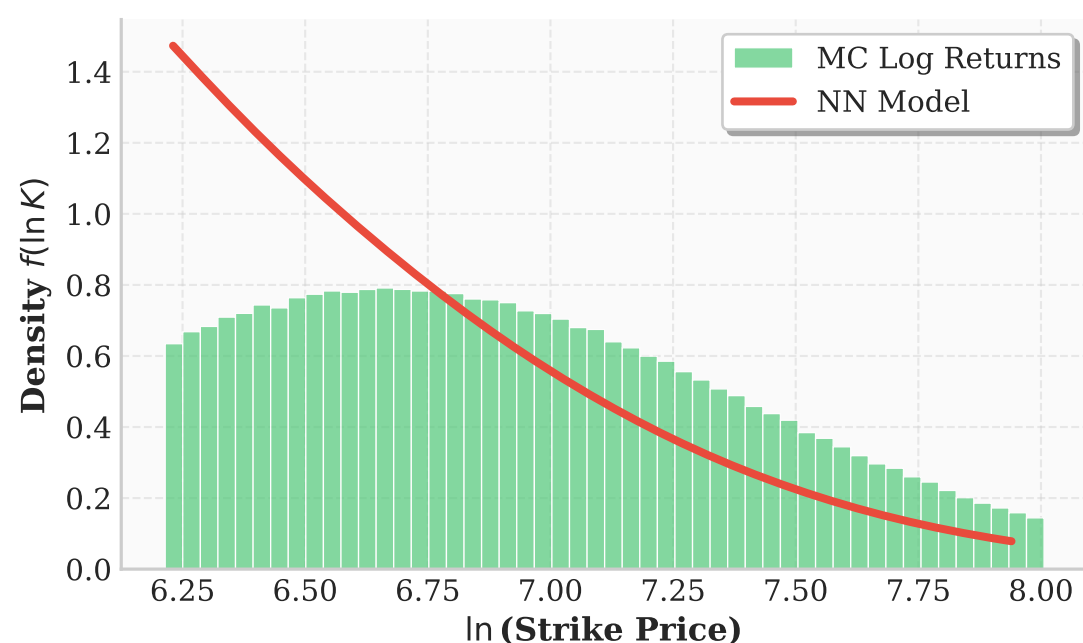
Gaussian Space (T = 0.25)  
Fitted:  $\mu=6.72, \sigma=0.41 \rightarrow$  Standardized N(0,1)  
MC Stats:  $\mu=0.45, \sigma=0.98, \text{Skew}=0.38, \text{ExKurt}=-0.52$



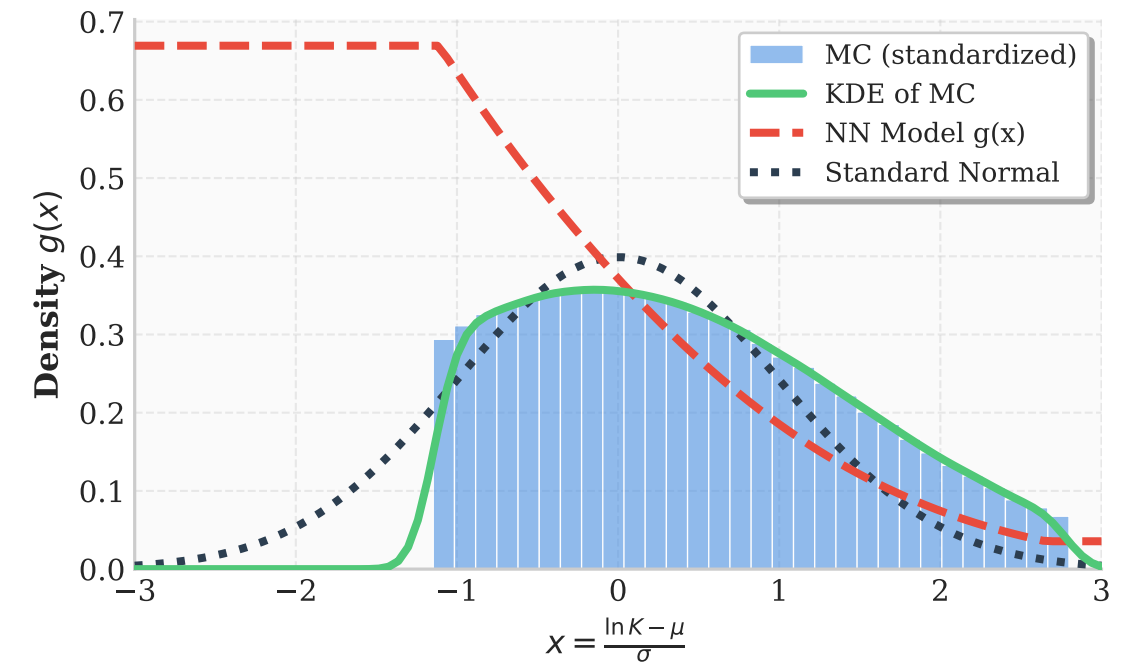
Strike Distribution (T = 0.50)



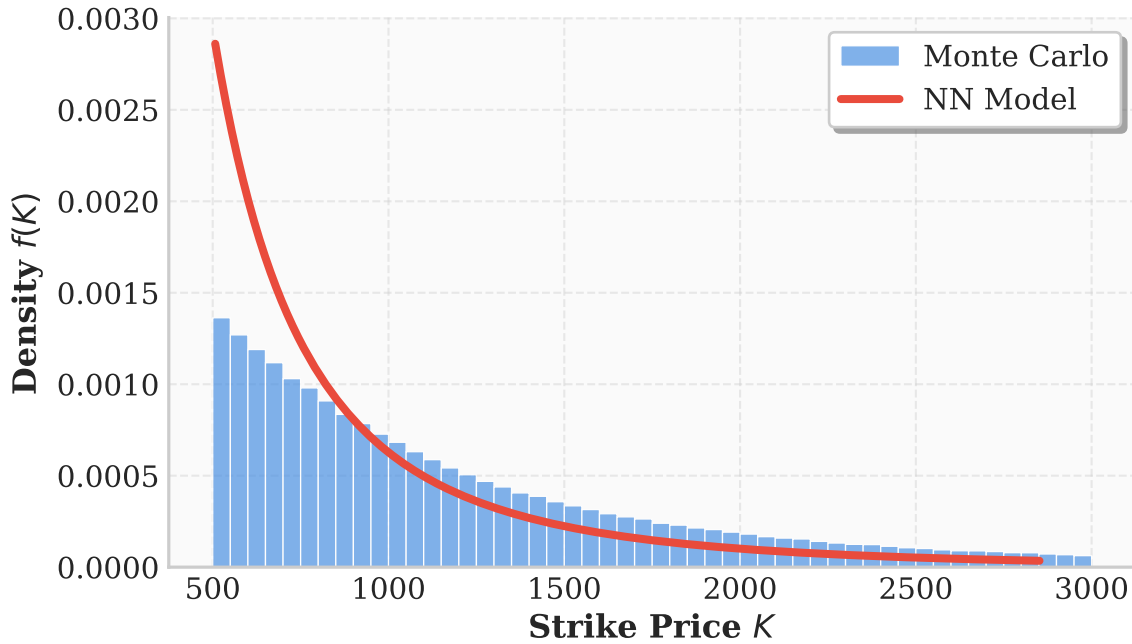
Log-Normal Distribution (T = 0.50)



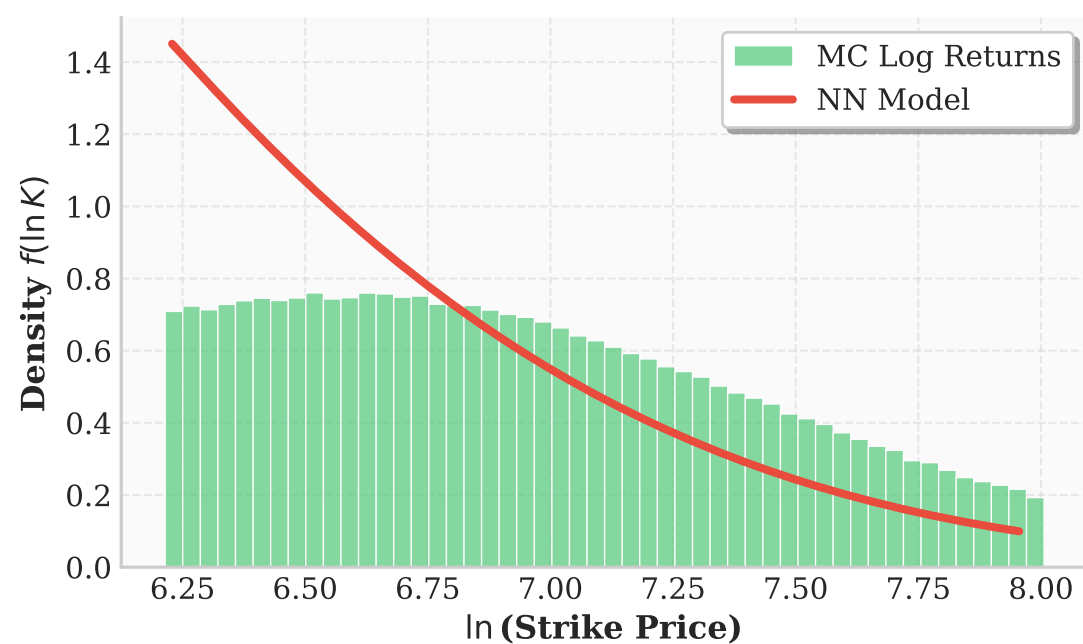
Gaussian Space (T = 0.50)  
Fitted:  $\mu=6.74, \sigma=0.45 \rightarrow$  Standardized N(0,1)  
MC Stats:  $\mu=0.43, \sigma=0.98, \text{Skew}=0.38, \text{ExKurt}=-0.76$



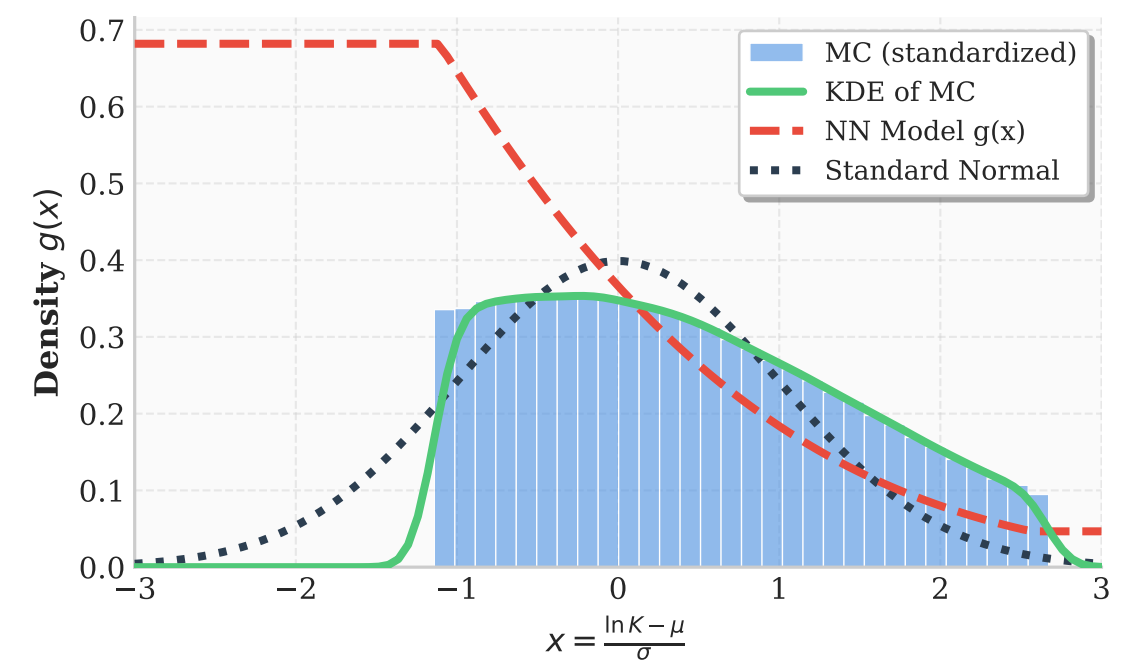
Strike Distribution (T = 0.75)



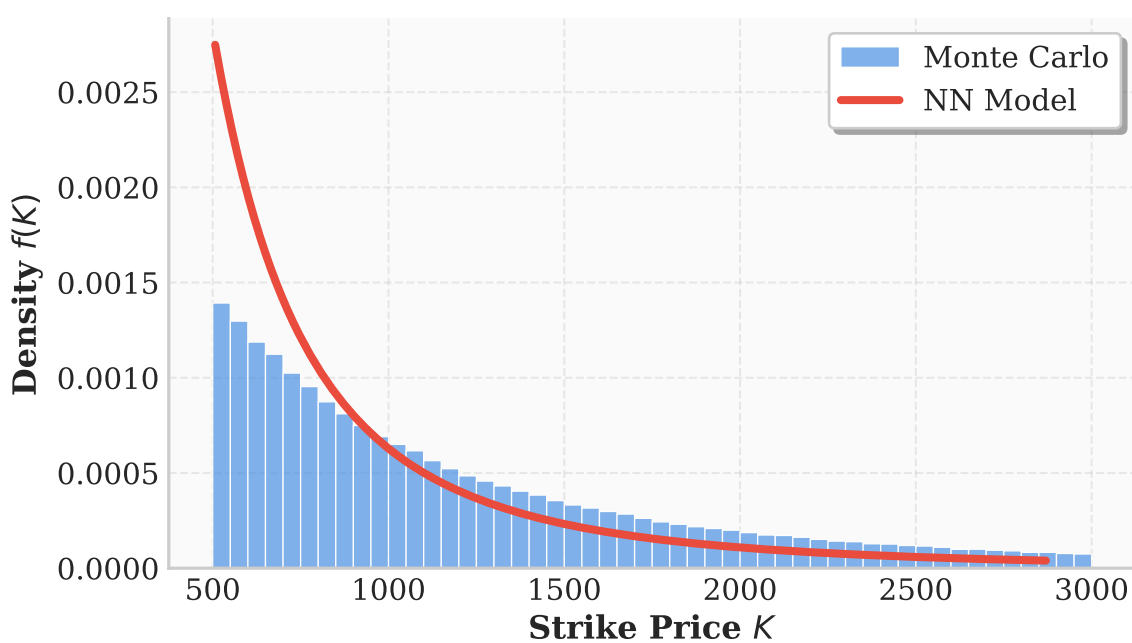
Log-Normal Distribution (T = 0.75)



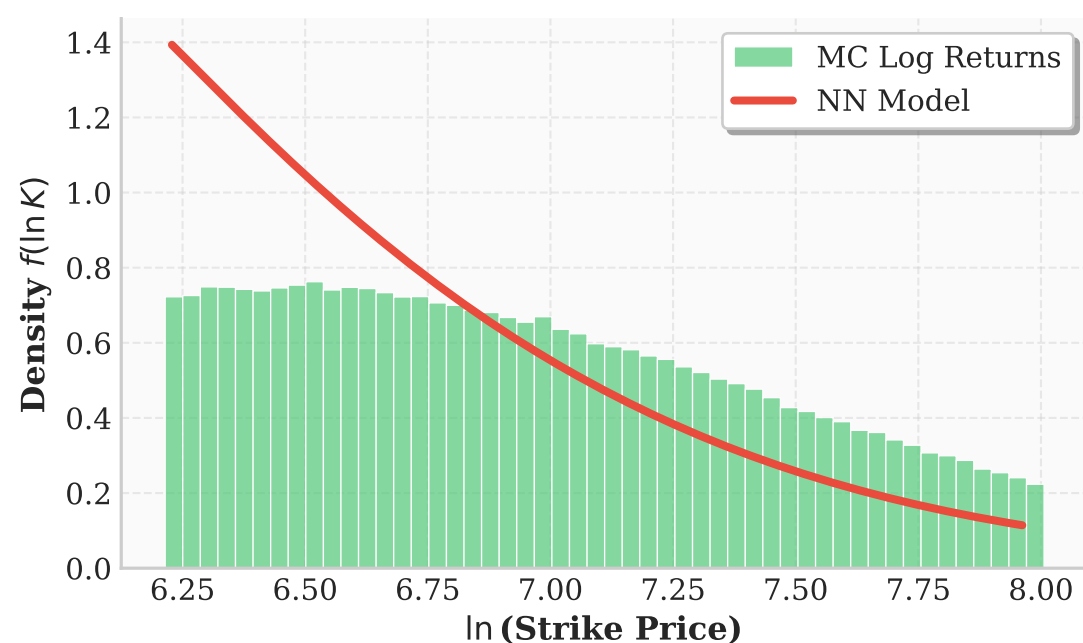
Gaussian Space (T = 0.75)  
Fitted:  $\mu=6.75, \sigma=0.47 \rightarrow$  Standardized N(0,1)  
MC Stats:  $\mu=0.42, \sigma=0.99, \text{Skew}=0.36, \text{ExKurt}=-0.85$



Strike Distribution (T = 1.00)



Log-Normal Distribution (T = 1.00)



Gaussian Space (T = 1.00)  
Fitted:  $\mu=6.77, \sigma=0.48 \rightarrow$  Standardized N(0,1)  
MC Stats:  $\mu=0.39, \sigma=1.00, \text{Skew}=0.35, \text{ExKurt}=-0.91$

