Regime-Aware Bayesian LSTM Architecture

Input Features
(batch_size, 60, 25)

60 timesteps × 25 features
(Market + Technical + Regime)

LSTM Layer 1
(batch_size, 60, 64)

64 units, return_sequences=True
Learns temporal patterns

LSTM Layer 2
(batch_size, 32)

32 units, return_sequences=False
Learns high-level patterns

Dense Layer 1
(batch_size, 32)

32 units, ReLU activation
Feature processing

Dense Layer 2
(batch_size, 16)

16 units, ReLU activation
Final feature extraction

Output Layer
(batch_size, 1)

1 unit, Linear activation
Predicted log return

Monte Carlo Dropout
Multiple predictions with dropout active for uncertainty

Averaging results and
calculating uncertainty