

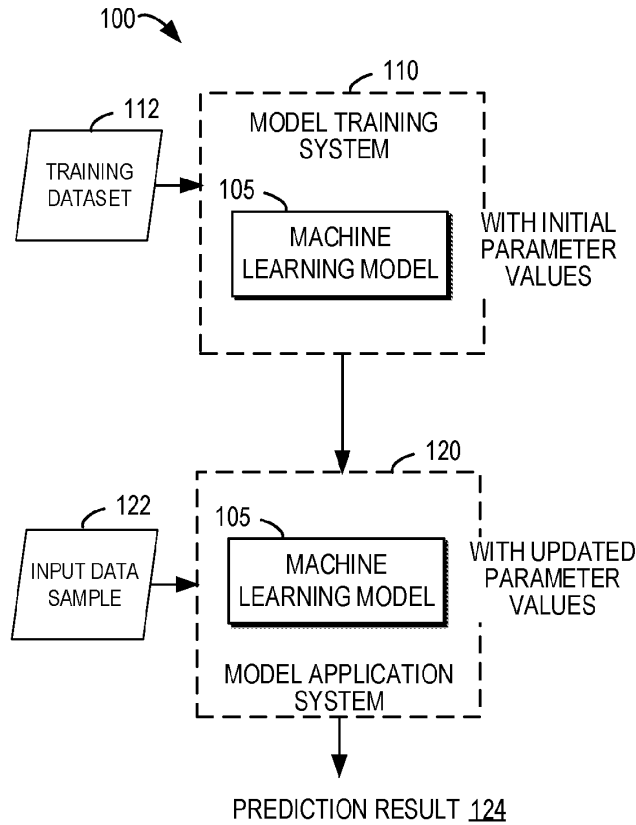


FIG. 1

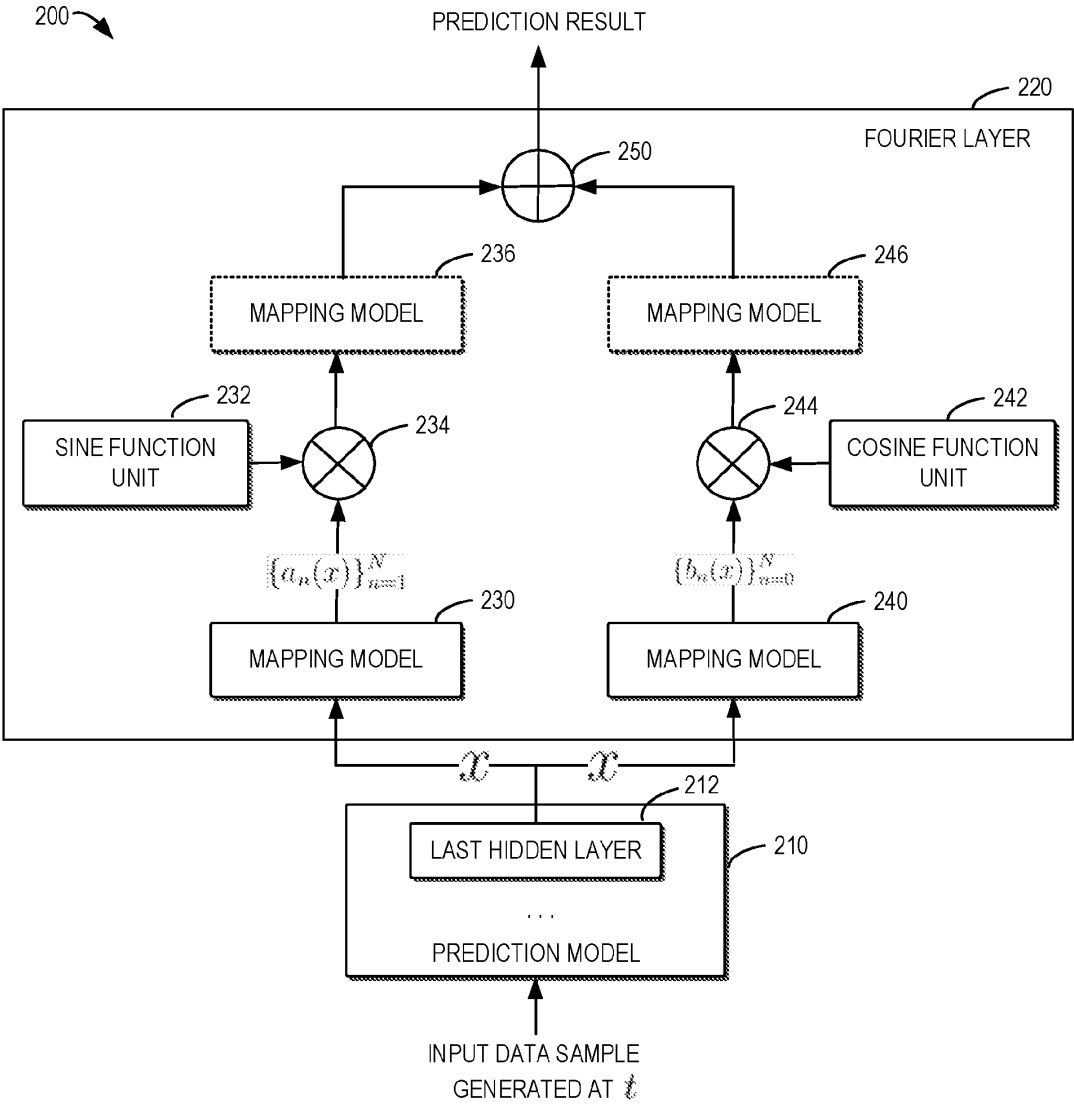
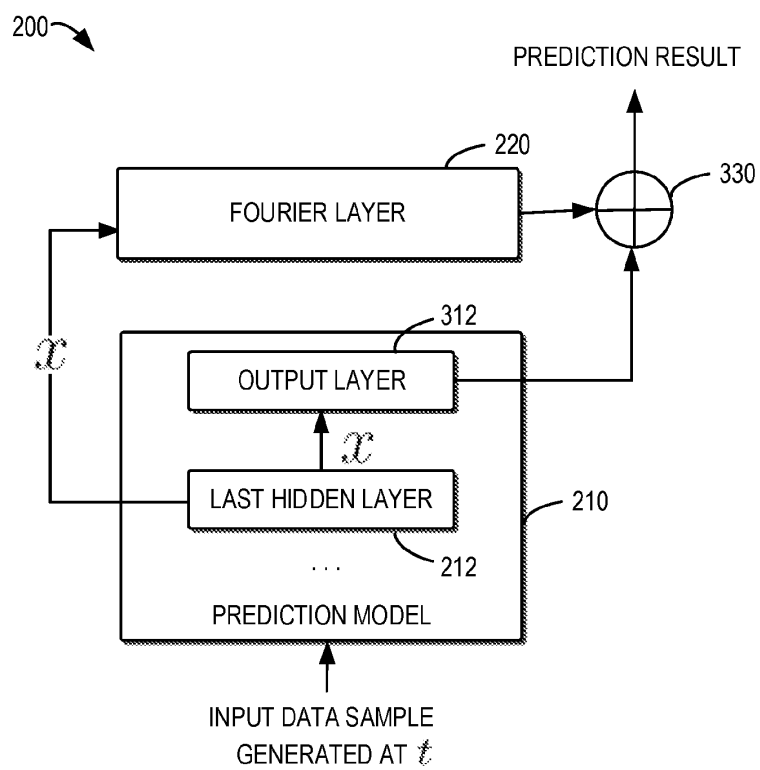


FIG. 2

**FIG. 3**

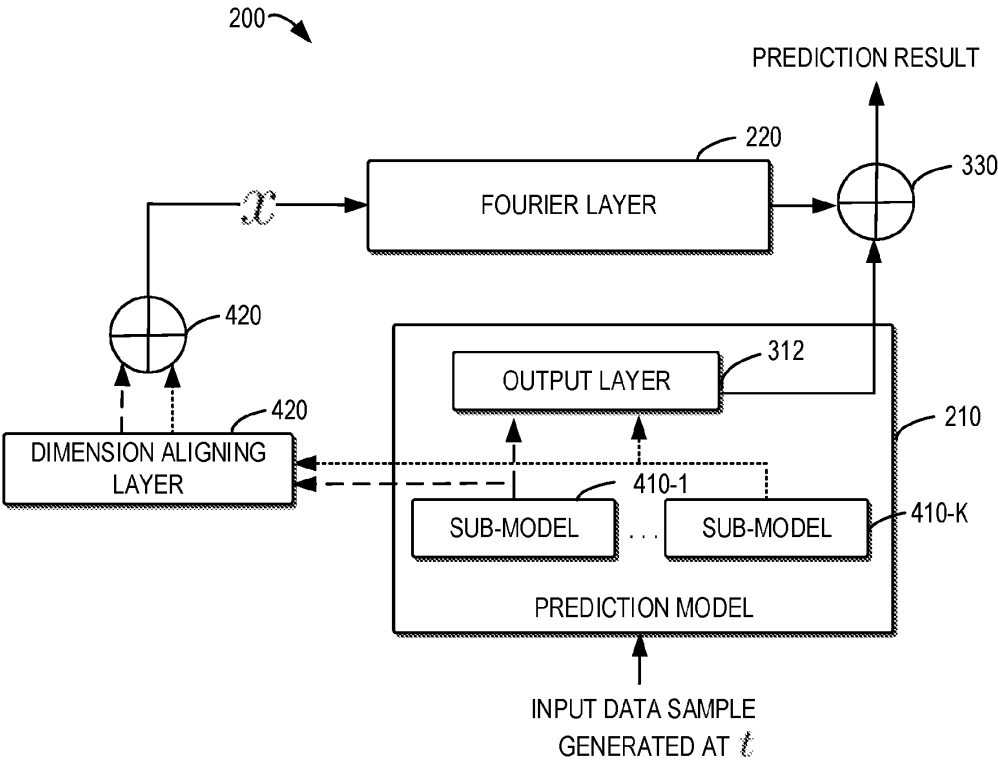
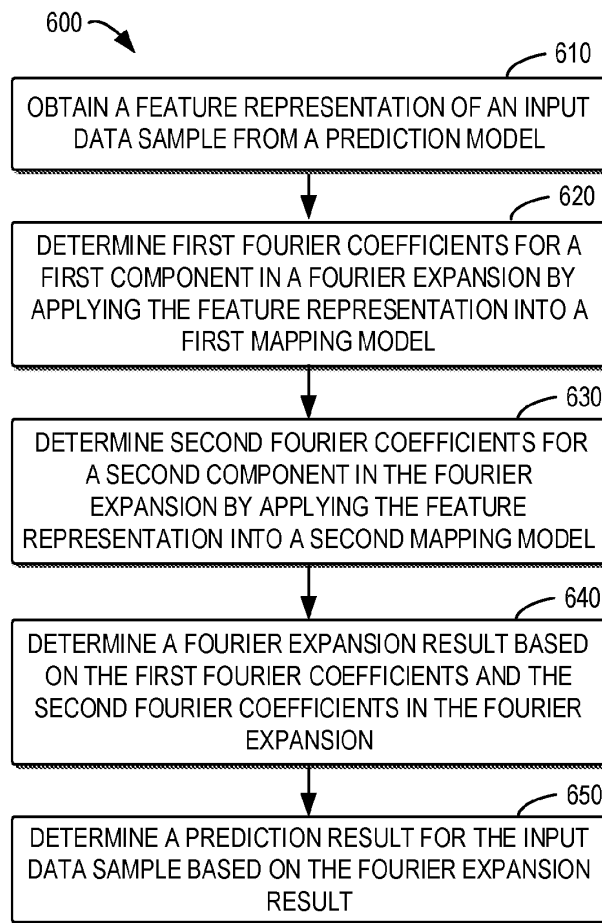


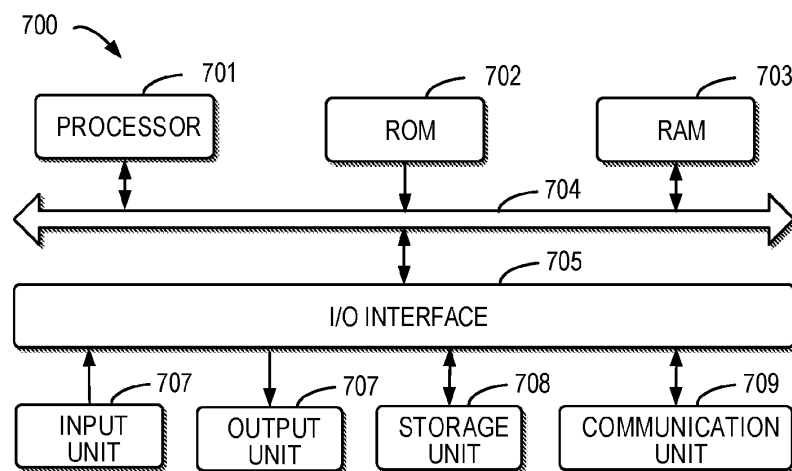
FIG. 4

500 **Algorithm 1** Streaming-SGD for F-MLP

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- 1: **Input:** Macro-iteration number $T_{\max}$; loss L ; step sizes $\{\eta_{k,\tau}\}_{k=0,\tau=1}^{T_{\max},\Gamma}$; period T ; cutoff frequency N/T .
 - 2: **Initialize** $\{a_n^{(0,1)}\}_{n=0}^N$ and $\{b_n^{(0,1)}\}_{n=1}^N$.
 - 3: **for** $(k, \tau) = (0, 1)$ to $(T_{\max}, 1)$ **do**
 - 4: Compute $f_N^{(k,\tau)}$ with $a_n^{(k,\tau)}$ and $b_n^{(k,\tau)}$ with (7).
 - 5: **for** $n \in \{0, \dots, N\}$ **do**
 - 6: Compute $g_{\theta_n}^{(k,\tau)}$ and $g_{\rho_n}^{(k,\tau)}$.
 - 7: Update $\theta_n^{(k,\tau)}$ and $\rho_n^{(k,\tau)}$.
 - 8: **end for**
 - 9: **end for**
 - 10: **Output:** $f_N^{(T_{\max},1)}$, $a_n^{(T_{\max},1)}$ and $b_n^{(T_{\max},1)}$.
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FIG. 5

**FIG. 6**

**FIG. 7**