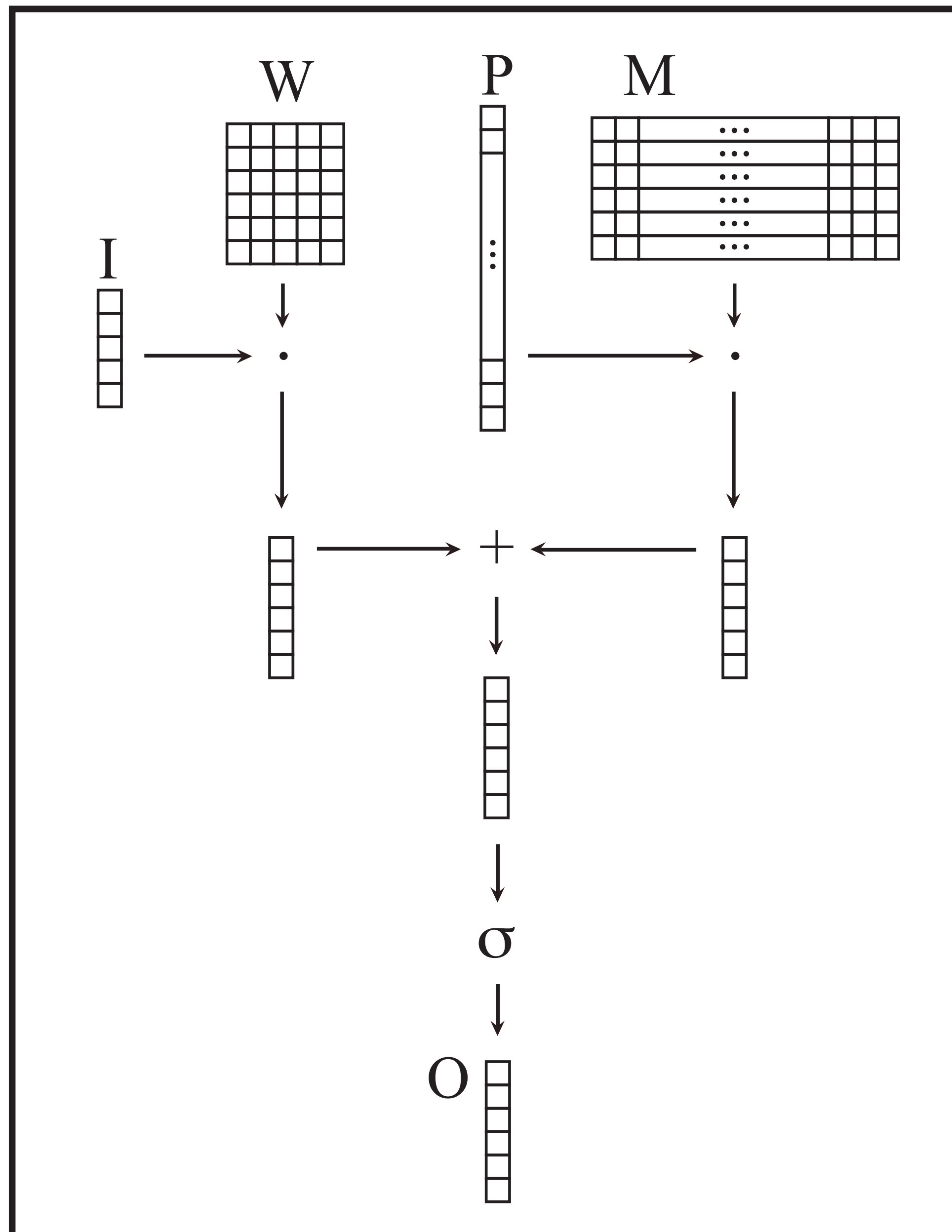


Multiple Gates



| Legend | |
|----------|---------------------|
| W | gate weights |
| I | input |
| O | output |
| P | previous states |
| M | gate memory weights |
| <hr/> | |
| + | sum |
| . | dot product |
| σ | sigmoid function |

$$\underbrace{g^{i \rightarrow j}}_O = \sigma \left(\underbrace{w_g^{i \rightarrow j}}_W \cdot \underbrace{h_t^{j-1}}_I + \underbrace{u_g^{i \rightarrow j}}_M \cdot \underbrace{h_{t-1}^*}_P \right)$$