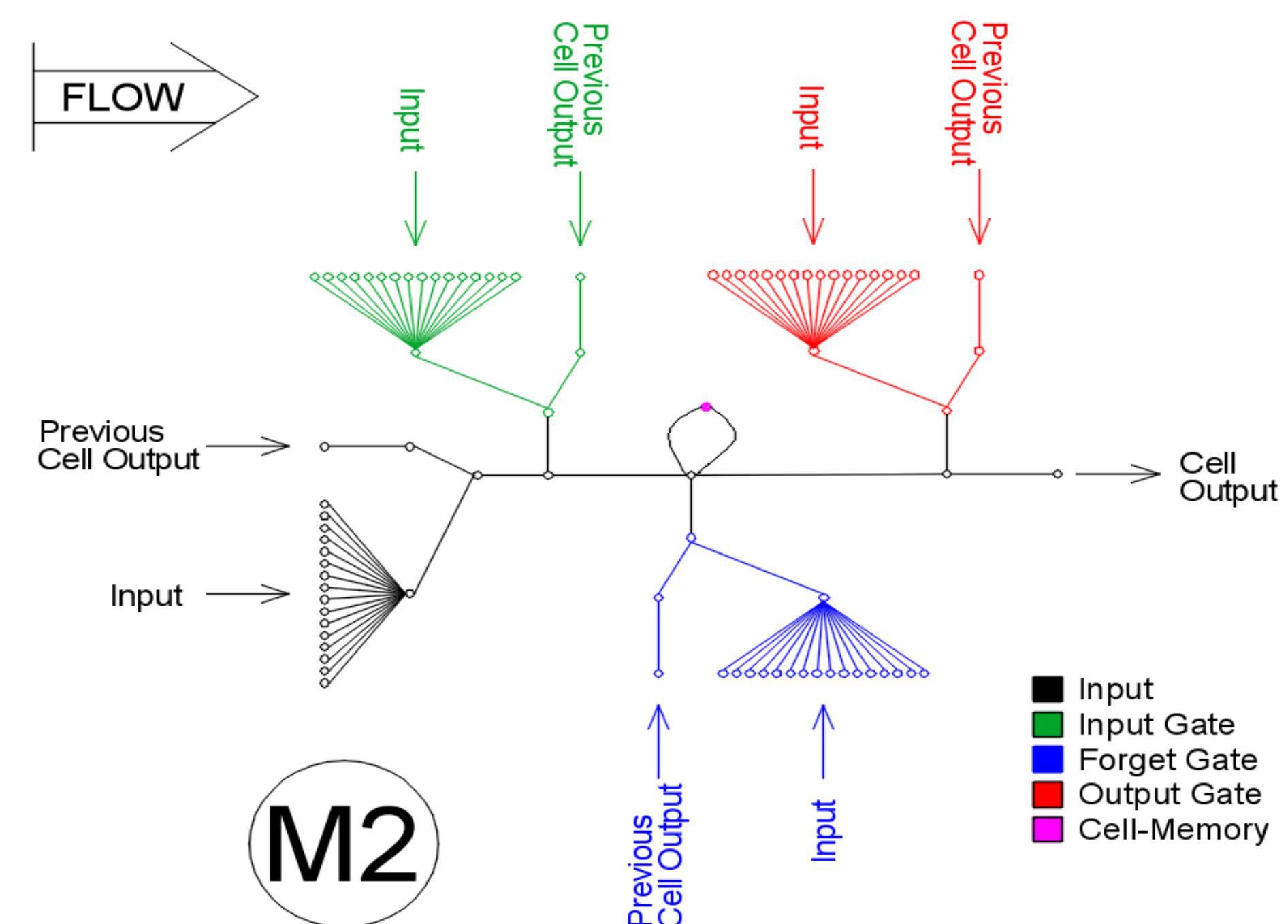
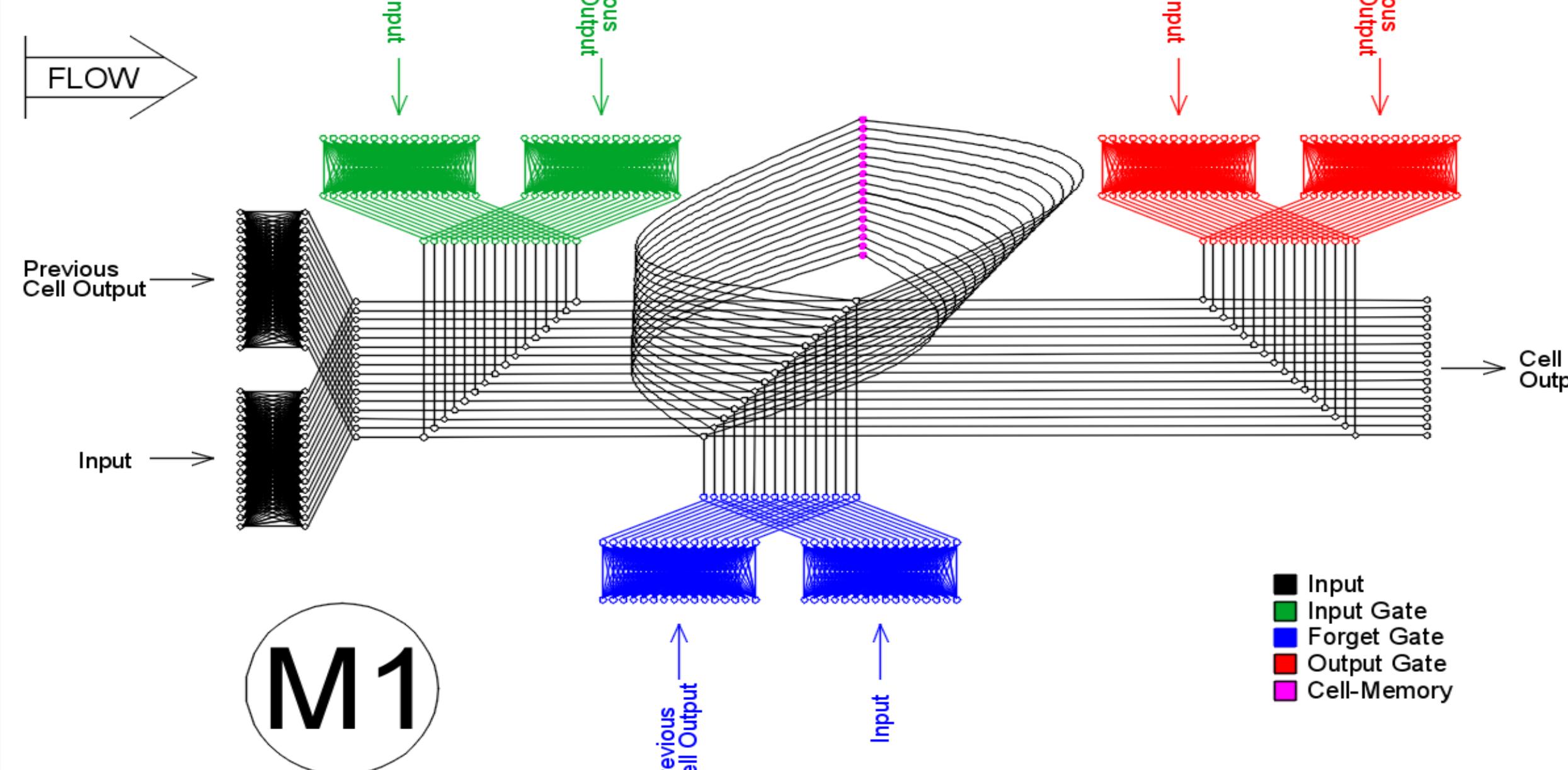
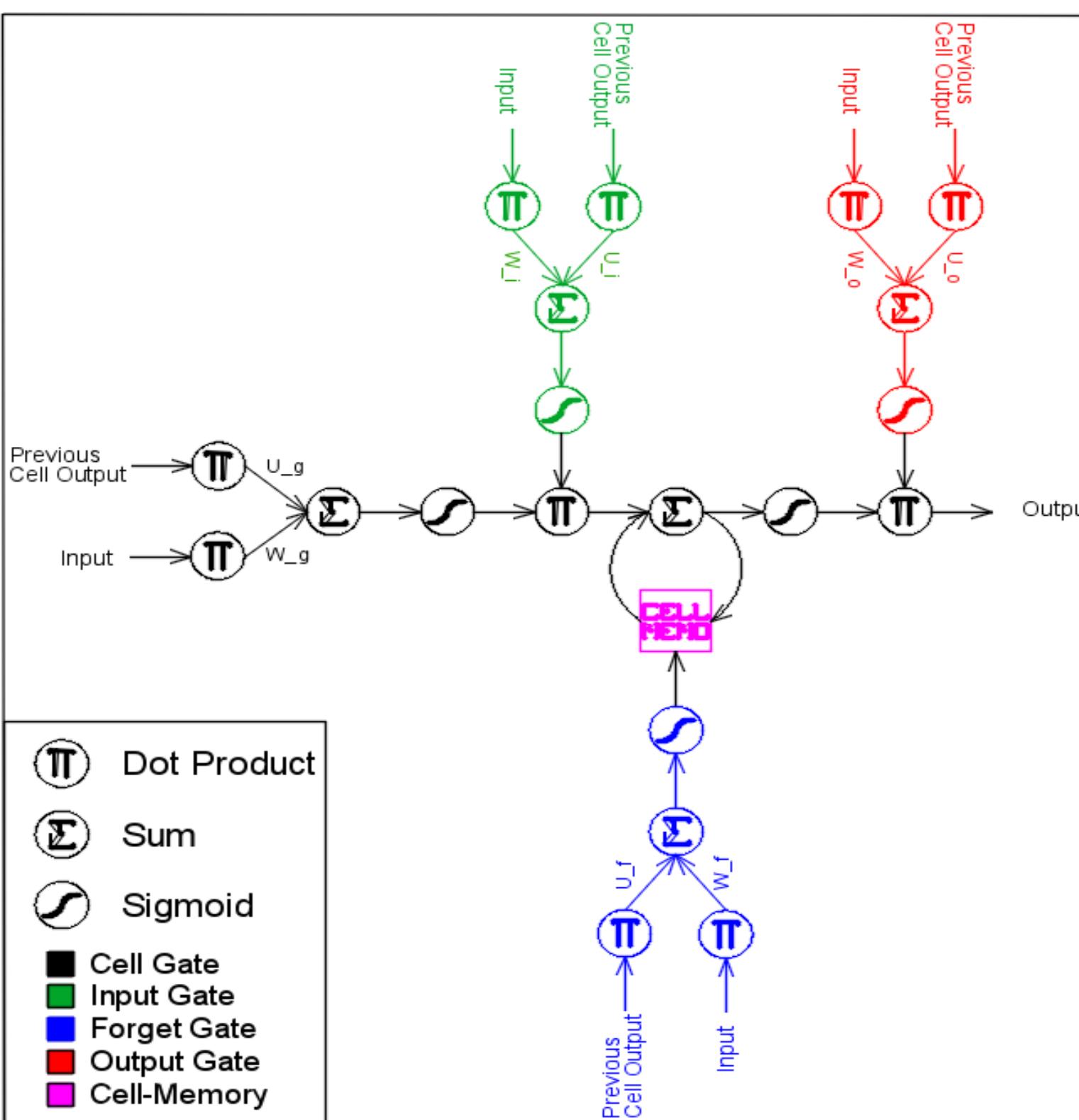


# Using LSTM Recurrent Neural Networks to Predict Excess Vibration Events in Aircraft Engines

AbdElRahman ElSaid\*, Brandon Wild†, James Higgins†, Travis Desell\*

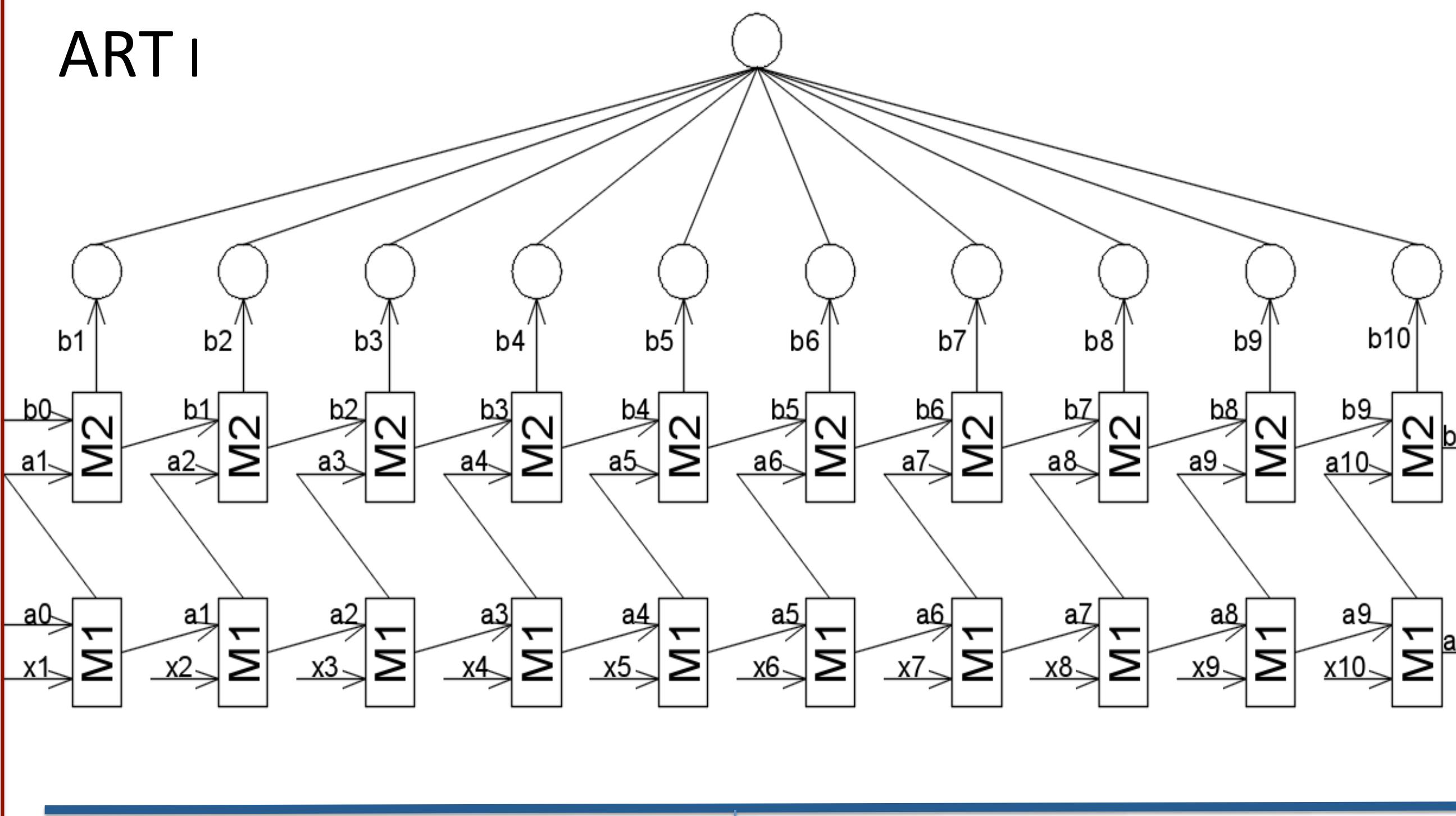
Department of Computer Science\* Department of Aviation†

## LSTM RNN Cells

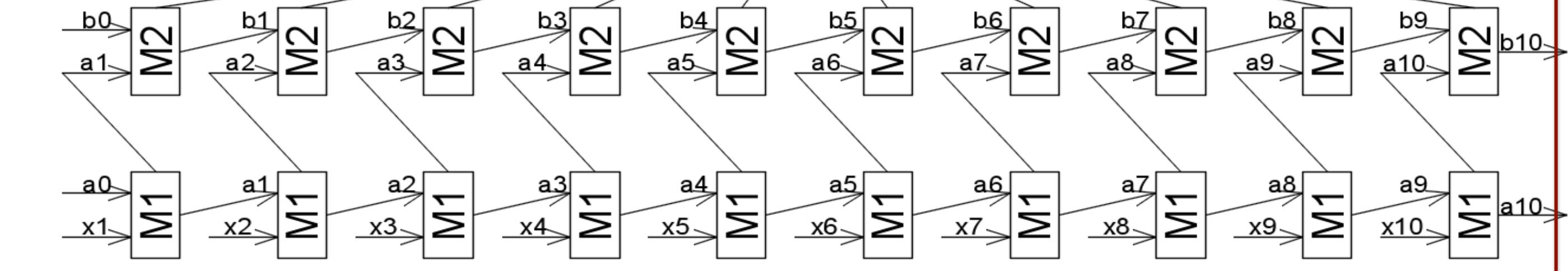


## Architectures

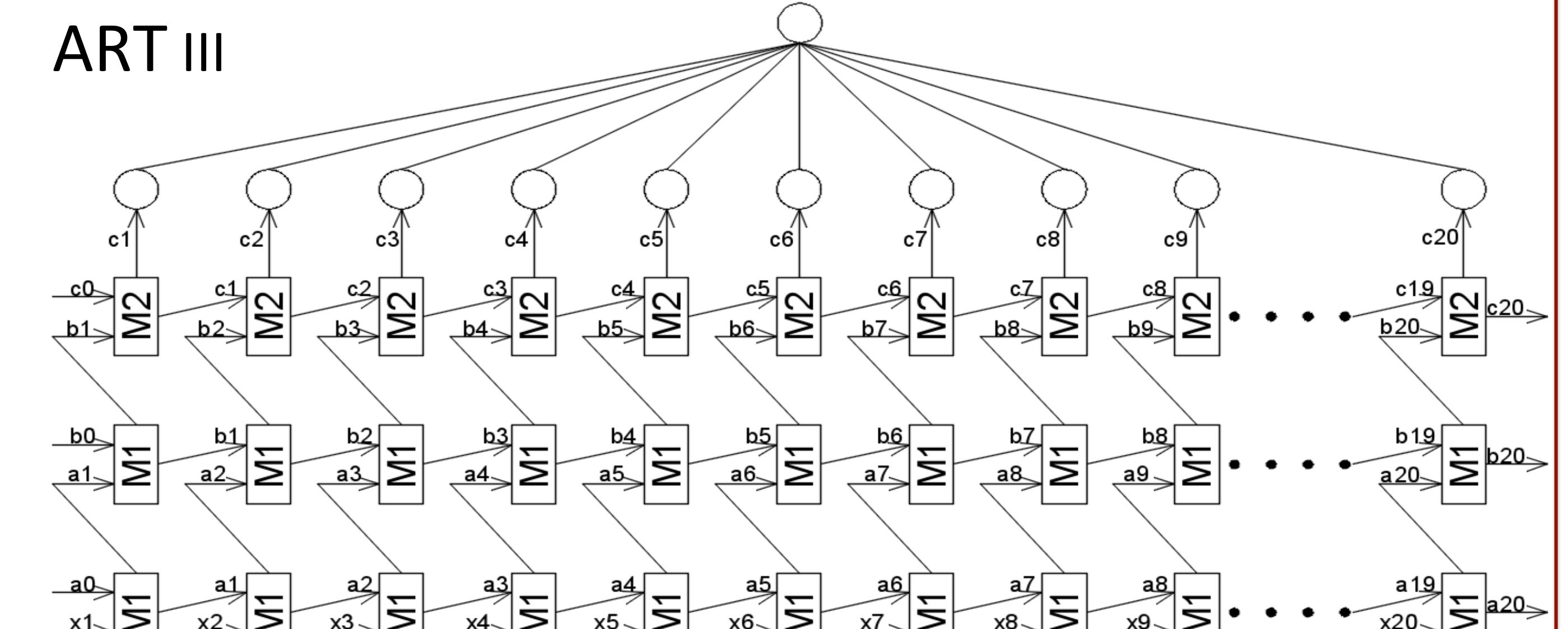
ART I



ART II

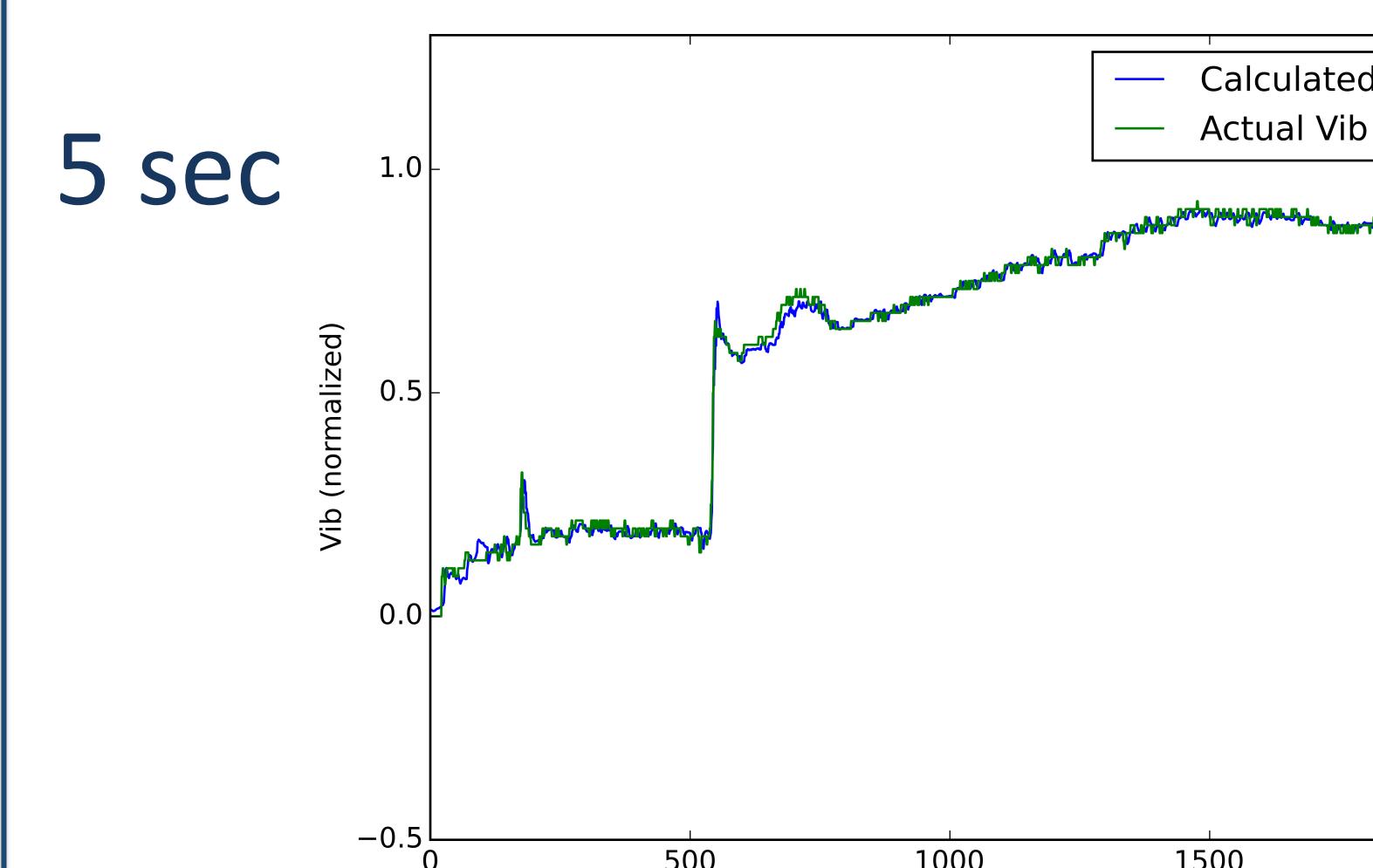


ART III

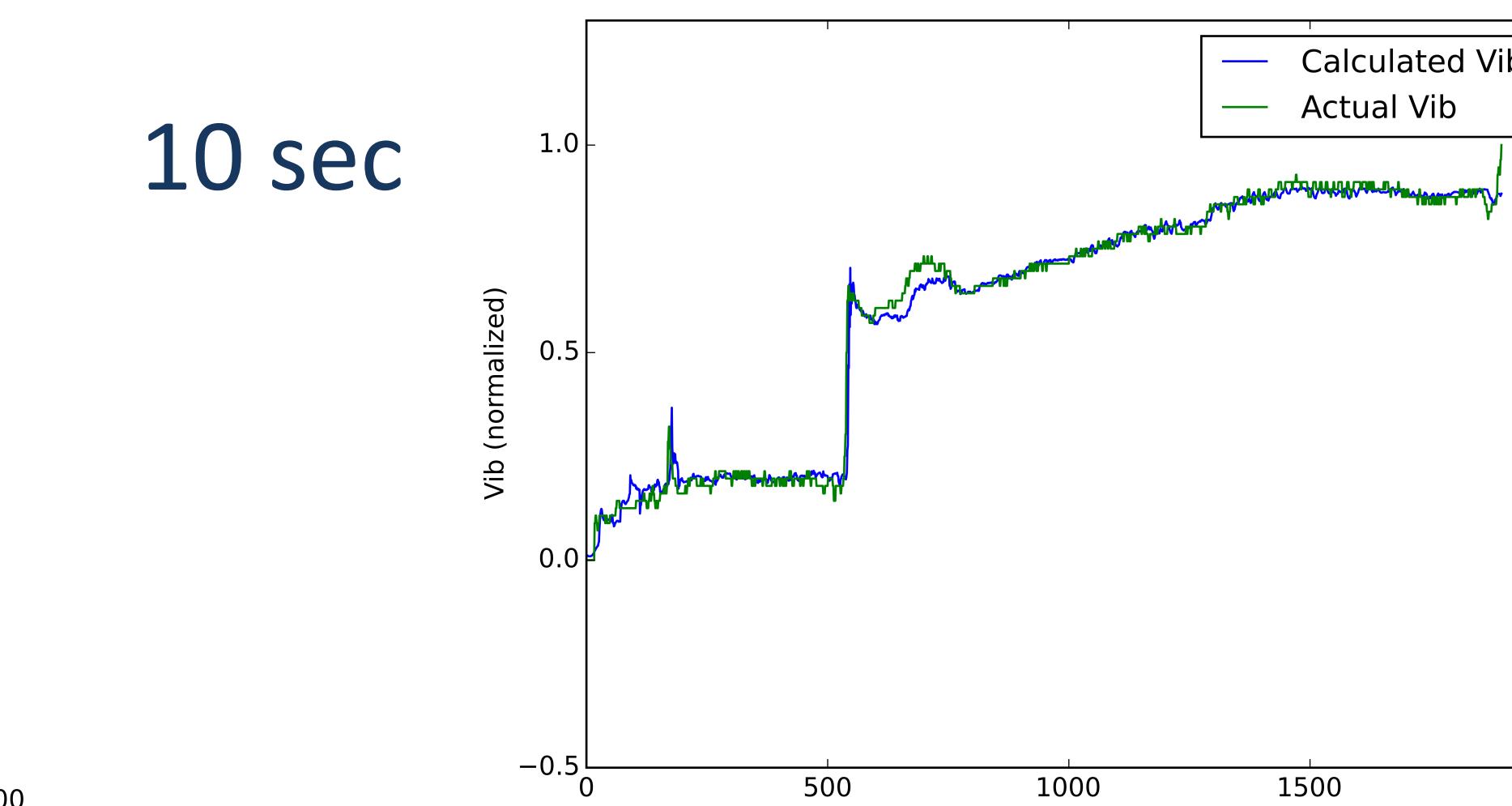


## Results For Architecture I

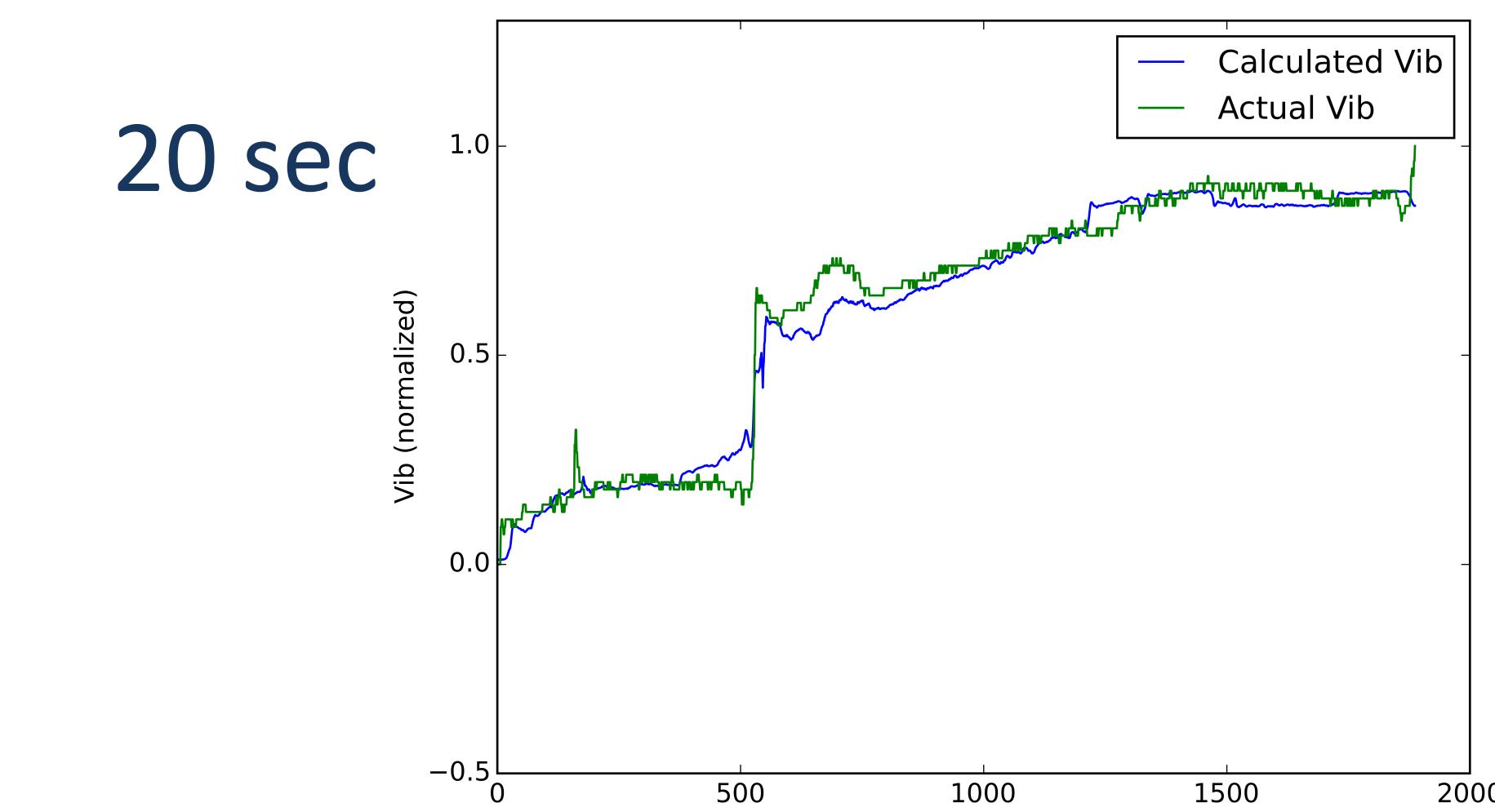
Vibration prediction for one flight



5 sec



10 sec



20 sec

Vibration prediction for all test flight data (10 sec)

