

Waveform Analysis Using Machine Learning Algorithms on the Front-end Electronics

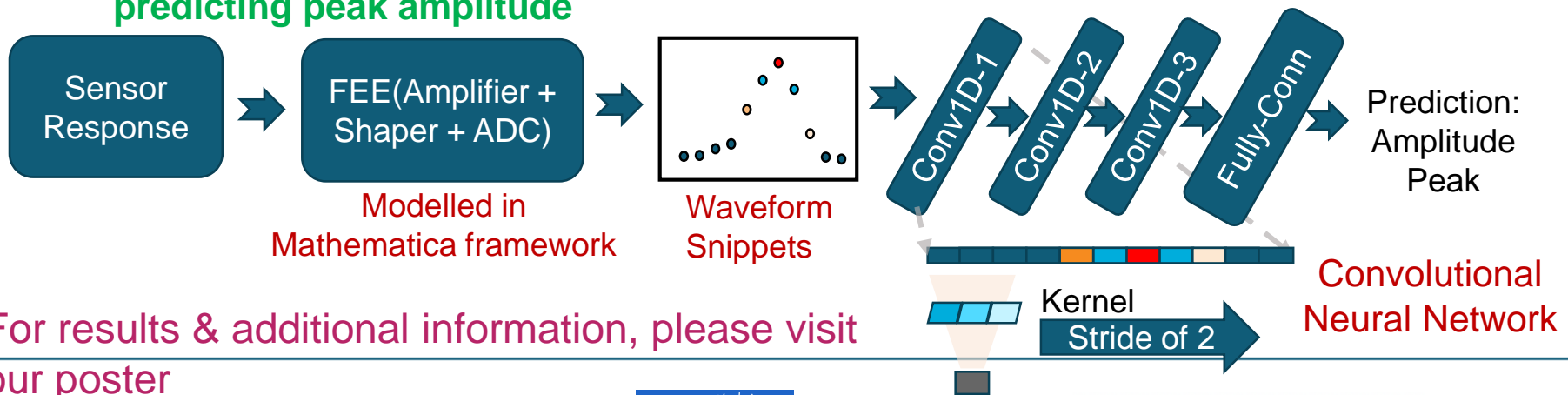
*Sandeep Miryala**, *Gabriella Carini*, *Grzegorz Deptuch*, *Jack Fried*, *Jin Huang*, *Yihui Ren*, *Florence Lucey-Renteria*, *Shinjae Yoo*
Brookhaven National Laboratory, * *Corresponding author*, smiryala@bnl.gov

❖ Data in Physics Experiment

- ❖ Front-End Electronics senses, amplifies and conditions radiation induced signals forming intense streams of raw data to trigger farms, computers or just to data storage
- ❖ Data processing outside is done with commercial hardware FPGA/GPU/DSP/Neural_Chips (>Bgates)

❖ Edge Computing on Front-End Electronics (FEE)

- ❖ Introduce smartness by bringing processing inside with artificial neural networks **is a future for ASICs, called as edge computing**
- ❖ **Investigated Multi-Layer Perceptron & Convolutional Neural Networks for predicting peak amplitude**



For results & additional information, please visit our poster