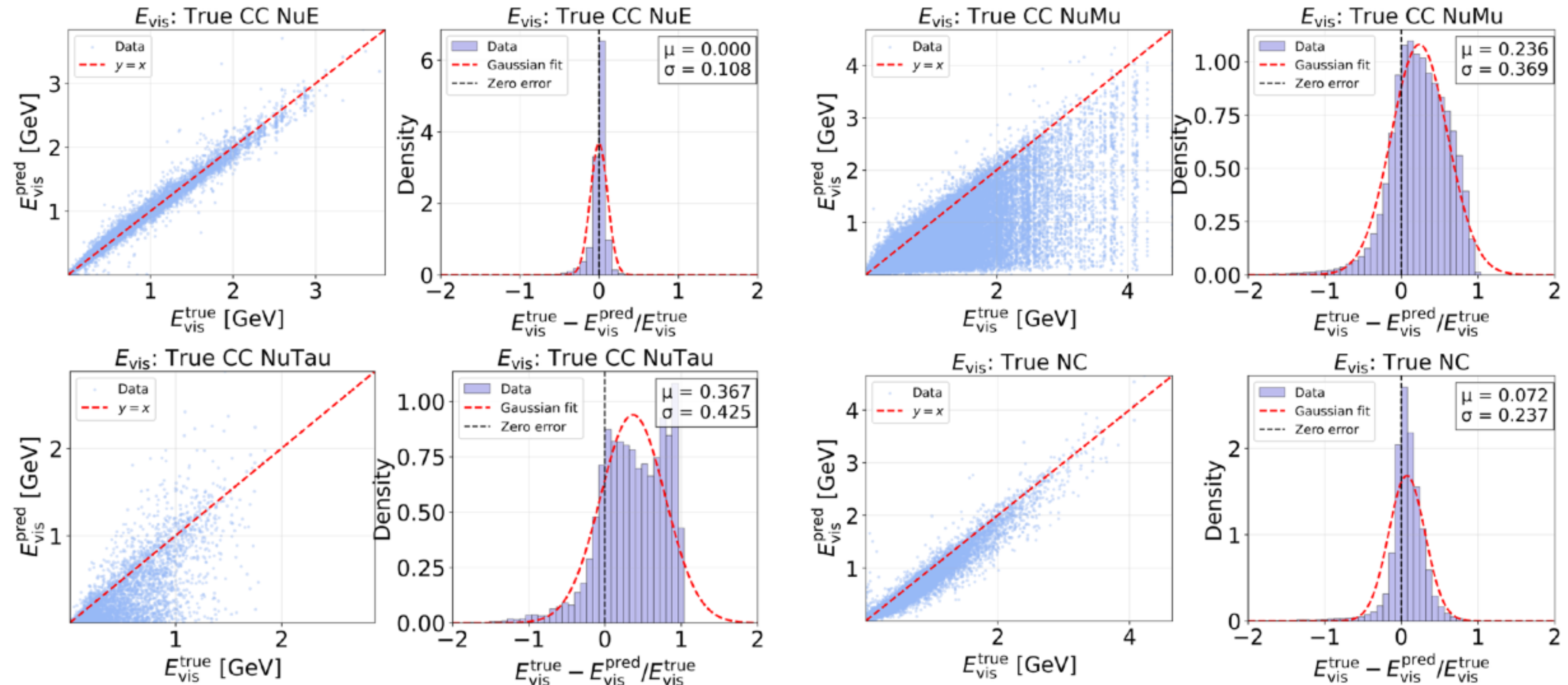# SCNN + Transformer: Visible Energy

Regression Results

- **Remarkable improvement in energy reconstruction**

  - Eliminated bias for ν_e CC

  - The resolution is almost _halved_ for all classes

- The MAE pre-training enabled the model to learn a universal energy calibration from the data's underlying structure.

SCNN + Transformer: Pt Miss

Regression Results

*BDT Results

- **Resolving the p_T^{miss} Dilemma:** MAE finds a much more physically robust solution to the bimodal distribution.

  - Excellent, low-bias prediction for ν_e and ν_μ

  - Simultaneously improving prediction for high-p_T^{miss} NC and ν_τ classes.

- Superior understanding, but still with remarkable bias