

MLForte: A Distributed Machine Learning Platform for HPC Users

Kyongseok Park^{1,2*}, Chan Hee Yu^{1,2}, Yuseon Kim^{1,2}, and Jung-Ho Um¹

¹ Korea Institute of Science and Technology Information, Republic of Korea

² University of Science and Technology, Republic of Korea

Corresponding author (Electronic mail: gspark@kisti.re.kr)

Machine learning is widely spread in various fields. Not only big data users but also HPC users are increasingly interested in the machine learning approach. Our platform provides a distributed machine learning environment for high-performance model development to researchers in various fields, including HPC users. When developing a deep learning model using big data or developing a model with a large amount of computation, a distributed deep learning model is required, but additional knowledge and experience are required. Unfortunately, many researchers have difficulties in developing distributed deep learning models, and they have no choice but to reduce the size of their research. Our platform makes it easy for machine learning model developers to scale and utilize CPU and GPU resources based on the size of their research. The developed model can be shared and reused among platform users. In addition, it can be applied and serviced in the decision support system at any time through a simple procedure. When machine learning model developers use our platform, the entire process of machine learning model development can be completed within a single platform. This can dramatically reduce the time and cost of service preparation for decision support, including model development.

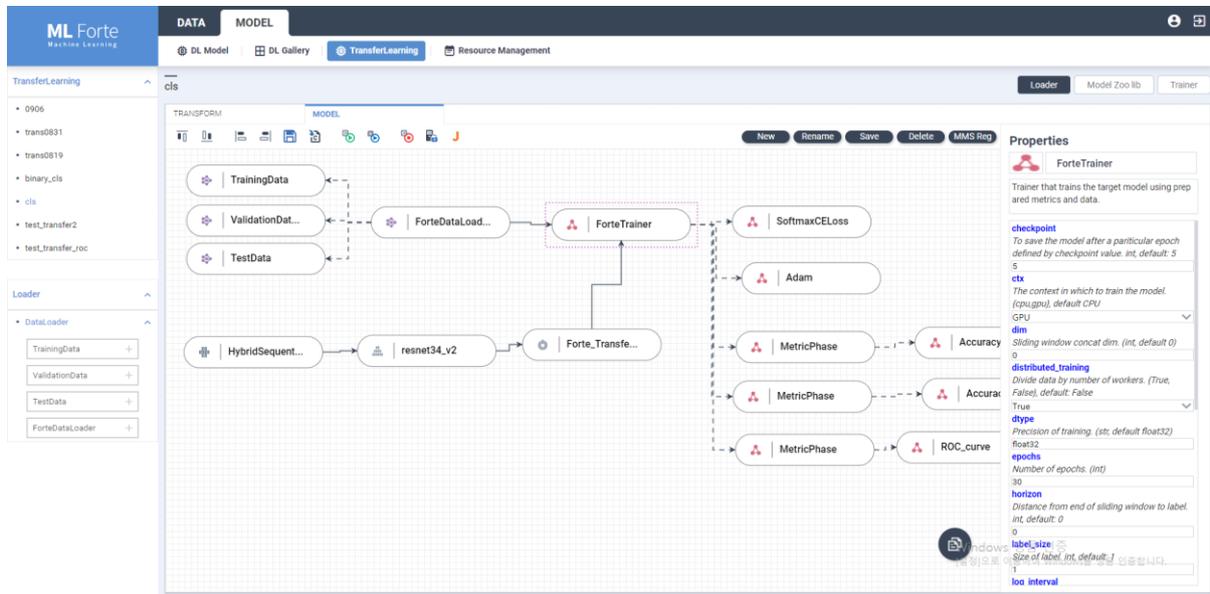


Figure 1 MLForte Modeling Page

Acknowledgments 1) This work was supported by the Korea Institute of Energy Technology Evaluation and Planning (KETEP) grant funded by the Korea government (Ministry of Trade, Industry and Energy) (No. 20181110100420). 2) This work was supported by the Korea Technology and Information Promotion

Agency for SMEs (TIPA) grant funded by the Korea government (Ministry of SMEs and Startups) (S3126610).

References

[1] K. Park et al., “High-level Analytics Platform for Development of Distributed Deep Learning Model”, KIPS, 27(2), 2020.