

R5 Federated ML application at edge Release Notes

Release Notes for the <Federated ML Blue Print>I

- Summary

This document provides the release note for federated ml applicatons at edge.

what is released

components of the release

- Hetero SecureBoost: more efficient computation with GOSS, histogram subtraction, cipher compression, 2-4x faster
- Hetero GLM: improved communication efficiency, adjustable floating point precision, 2x faster
- Hetero NN: adjustable floating point precision, support SelectiveBackPropagation and dropOut on interaction layer, 2x faster
- Hetero Feature Binning: improved algorithm with cipher compression, 2x faster
- Intersect: add split calculation option and adjustable random base fraction, 30% faster
- Homo NN: restructure torch backend and enhanced grammar; train and predict with raw image data
- Intersect supports SM3 hashing method
- Hetero SecureBoost: L1 penalty & adjustable min_child_weight to prevent overfitting
- NEW SecureBoost Transformer: feature engineering module that encodes instances with leaf nodes from SecureBoost model
- Hetero Pearson: support local VIF computation
- Hetero Feature Selection: support selection based on VIF and Pearson
- NEW Homo Feature Binning: support virtual/recursive binning strategy
- NEW Sample Weight: set sample weights based on label or from feature column, Hetero GLM & Hetero SecureBoost support weighted training
- NEW Data Transformer: case-insensitive on data schema
- Local Baseline supports prediction task
- Cross Validation: output fold split history
- Evaluation: add multi-result-unfold option which unfolds multi-classification evaluation result to several binary evaluation results in a one-vs-rest manner

- Upgrade Procedures

- N/A

- Release Data

- Module version changes

- 1.6.0

- Document Version Changes

- N/A

- Software Deliverable

- Software is available in the ai edge repo: <https://gerrit.akraino.org/r/admin/repos/aiedge>

- Documentation Deliverable

- [R5 Federated ML application at edge API Document](#)
- [R5 Federated ML application at edge Installation Document](#)
- [R5 Federated ML application at edge Test Document](#)
- [R5 Federated ML application at edge Architecture Document](#)

- Fixed Issues and Bugs

- N/A

- Enhancements

- N/A

- Version change

- Deliverable

- Known Limitations, Issues and Workarounds

- System Limitations

- Known Issues

- N/A

- Workarounds

- N/A

- References

- [FATE release logs](#)