

control_experiment_5G_A2_percentage

June 8, 2025

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[1]: import sys
import os

src_path = os.path.abspath(os.path.join(os.getcwd(), "..", "src"))
if src_path not in sys.path:
    sys.path.insert(0, src_path)

from plots import plot_plotly, preprocessing_results

[2]: local_FedAtt = 'results/results_FedAtt_2025-02-26_13_25_19.867217.txt'
global_FedAtt = 'results/global_model_evaluation_FedAtt_2025-02-26_13_25_19.
↳867217.txt'

local_FedProx = 'results/results_FedProx_2025-02-26_13_25_13.689653.txt'
global_FedProx = 'results/global_model_evaluation_FedProx_2025-02-26_13_25_13.
↳689653.txt'

local_FedAvg = 'results/results_FedAvg_2025-02-26_13_29_55.229671.txt'
global_FedAvg = 'results/global_model_evaluation_FedAvg_2025-02-26_13_29_55.
↳229671.txt'

local_FedCluLearn = 'results/results_FedCluLearn_2025-02-26_13_25_33.132058.txt'
global_FedCluLearn = 'results/
↳global_model_evaluation_FedCluLearn_2025-02-26_13_25_33.132058.txt'

local_FedCluLearn_Prox = 'results/results_FedCluLearn_Prox_2025-02-26_13_26_04.
↳885053.txt'
global_FedCluLearn_Prox = 'results/
↳global_model_evaluation_FedCluLearn_Prox_2025-02-26_13_26_04.885053.txt'

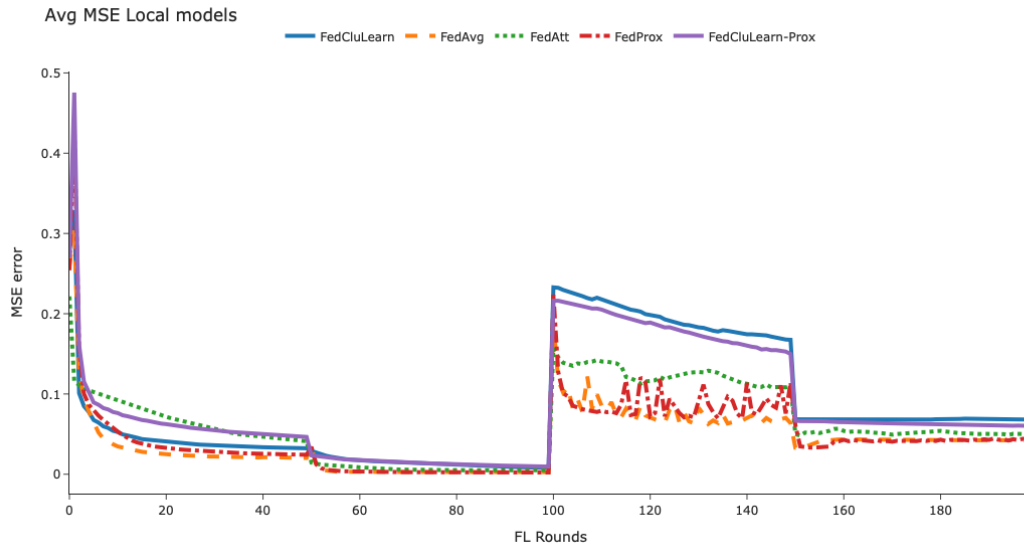
[3]: local_filenames = [local_FedCluLearn, local_FedAvg, local_FedAtt,
↳local_FedProx, local_FedCluLearn_Prox]
global_filenames = [global_FedCluLearn, global_FedAvg, global_FedAtt,
↳global_FedProx, global_FedCluLearn_Prox]

[4]: mse_column = 'mse'
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n_rounds, y = preprocessing_results(filenamees=local_filenames,
    ↪mse_column=mse_column)
plot_plotly(n_rounds, y, title='Avg MSE Local models',
    ↪y_axis_title=f'{mse_column.upper()} error', y_axis_max=0.3)

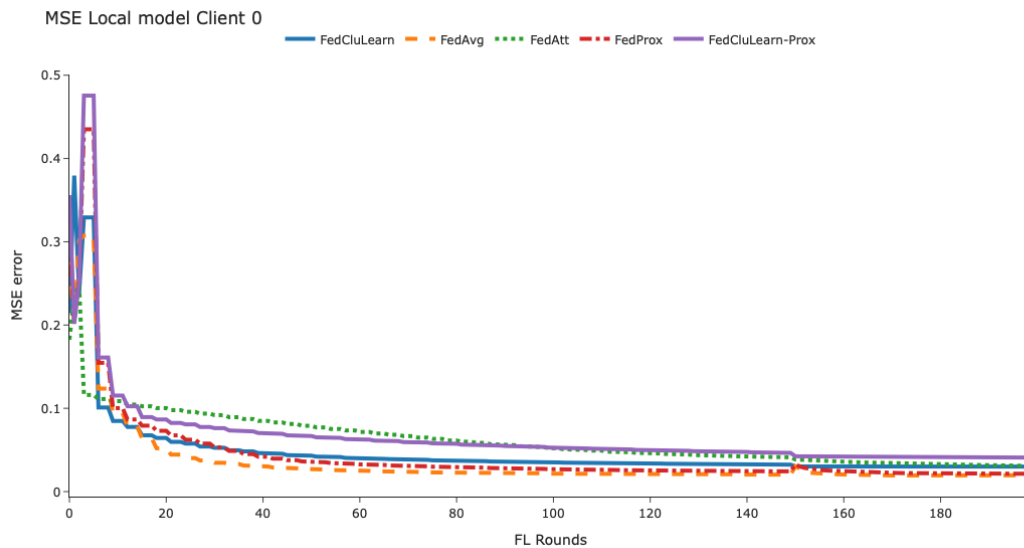
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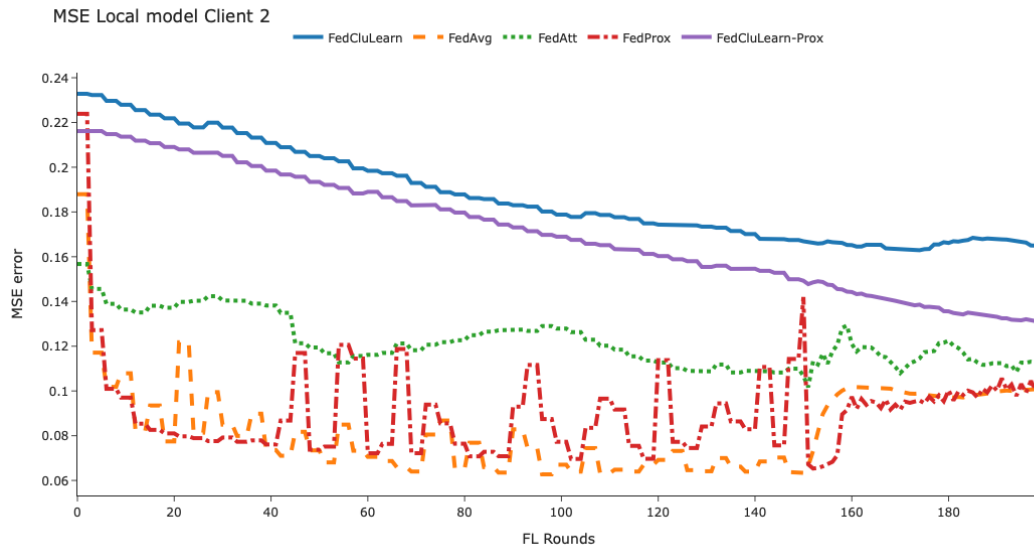
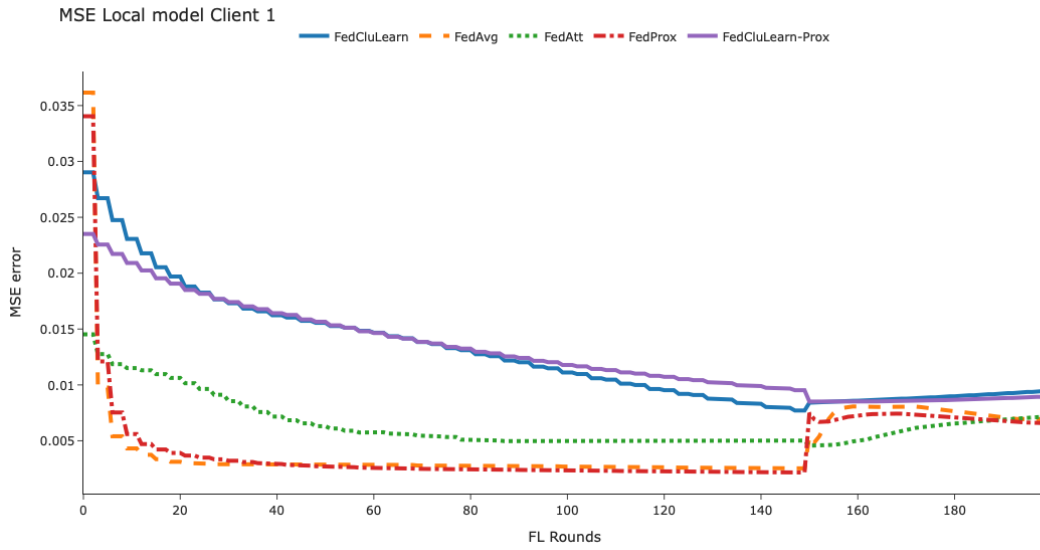


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[5]: for client_id in [0,1,2]:
    n_rounds, y = preprocessing_results(filenamees=local_filenames,
    ↪client_id=client_id, mse_column='mse')
    plot_plotly(n_rounds, y, title=f'MSE Local model Client {client_id}',
    ↪y_axis_title='MSE error')

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[6]: mse_column = 'mse'
# n_rounds, y = preprocessing_results(filenamees=[global_FedCluLearn,
↳ global_FedCluLearn_recent, global_FedCluLearn_percentage, global_FedAvg,
↳ global_FedAtt, global_FedProx, global_FedCluLearn_Prox,
↳ global_FedCluLearn_Prox_recent, None], mse_column=mse_column)
```

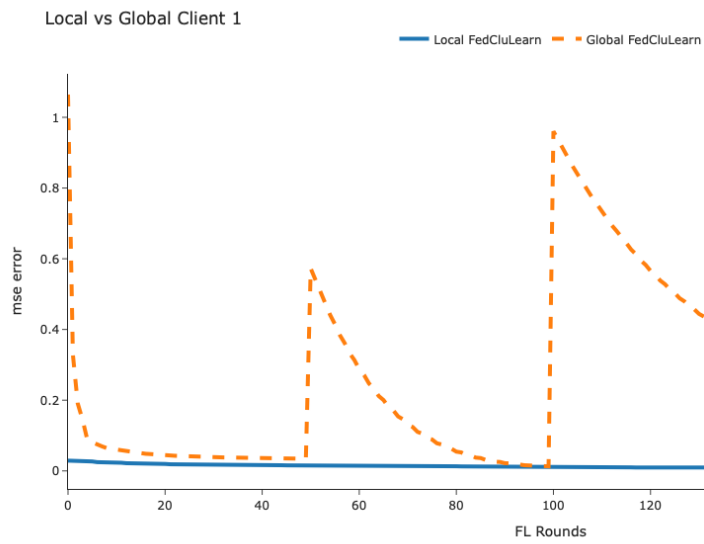
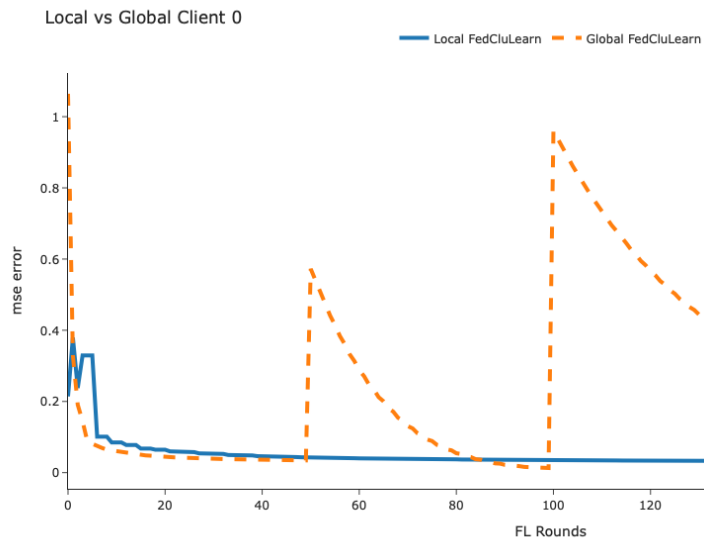
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# global_filenames = [global_FedCluLearn, global_FedAvg, global_FedAtt,
    ↪global_FedProx, global_FedCluLearn_Prox]
global_filenames = [global_FedCluLearn, global_FedAvg, global_FedAtt,
    ↪global_FedProx, global_FedCluLearn_Prox]
n_rounds, y = preprocessing_results(filenamees=global_filenames,
    ↪mse_column=mse_column)
#Avg {mse_column.upper()} Global model
plot_plotly(n_rounds, y, title=f'Global model', y_axis_title=f'{mse_column.
    ↪upper()}', y_axis_max=1)
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[7]: mse_column = 'r2'
global_filenames = [global_FedCluLearn, global_FedAvg, global_FedAtt,
    ↪global_FedProx, global_FedCluLearn_Prox]
n_rounds, y = preprocessing_results(filenamees=global_filenames,
    ↪mse_column=mse_column)
plot_plotly(n_rounds, y, title=f'Global model', y_axis_title=f'{mse_column.
    ↪upper()}', y_axis_max=1)
```

```
[8]: mse_column='mse'
for client_id in [0,1,2]:
    n_rounds, y = preprocessing_results(filenamees=global_filenames,
    ↪client_id=client_id,mse_column=mse_column)
    plot_plotly(n_rounds, y, title=f'Global model - test data Client
    ↪{client_id}', y_axis_title=f'{mse_column} error')
```

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[9]: mse_column='r2'
for client_id in [0,1,2]:
    n_rounds, y = preprocessing_results(filenamees=global_filenames,
    ↪client_id=client_id,mse_column=mse_column)
    plot_plotly(n_rounds, y, title=f'Global model - test data Client
    ↪{client_id}', y_axis_title=f'{mse_column} error')
```

```
[10]: mse_column='mse'
for client_id in [0,1,2]:
    n_rounds, y = preprocessing_results(filenamees=[local_FedCluLearn,
    ↪global_FedCluLearn, None, None, None],
    ↪client_id=client_id,mse_column=mse_column)
    plot_plotly(n_rounds, y, title=f'Local vs Global Client {client_id}',
    ↪y_axis_title=f'{mse_column} error', algo_name1='Local FedCluLearn',
    ↪algo_name4='Global FedCluLearn')
```



Local vs Global Client 2

