

## control\_experiment\_5G\_A1\_totals

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]: # experiment 1, local epochs 3 local concept drift
local_FedCluLearn = 'results/results_FedCluLearn_2025-02-05_11_02_47.756245.txt'
global_FedCluLearn = 'results/
↳global_model_evaluation_FedCluLearn_2025-02-05_11_02_47.756245.txt'

local_FedAvg = 'results/results_FedAvg_2025-02-05_11_02_59.570648.txt'
global_FedAvg = 'results/global_model_evaluation_FedAvg_2025-02-05_11_02_59.
↳570648.txt'

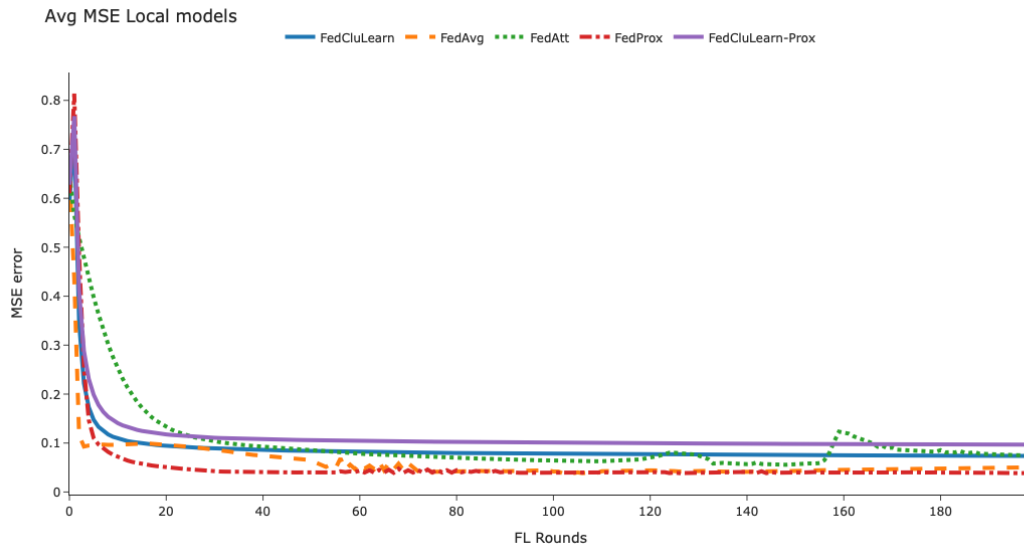
local_FedAtt = 'results/results_FedAtt_2025-02-15_14_24_24.188745.txt'
global_FedAtt = 'results/global_model_evaluation_FedAtt_2025-02-15_14_24_24.
↳188745.txt'

local_FedProx = 'results/results_FedProx_2025-02-16_08_55_52.957901.txt'
global_FedProx = 'results/global_model_evaluation_FedProx_2025-02-16_08_55_52.
↳957901.txt'

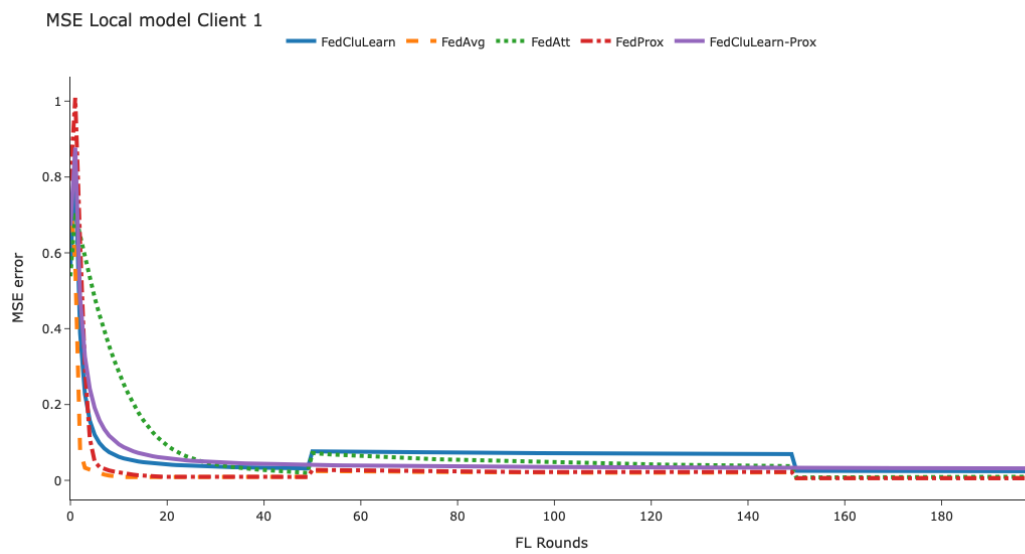
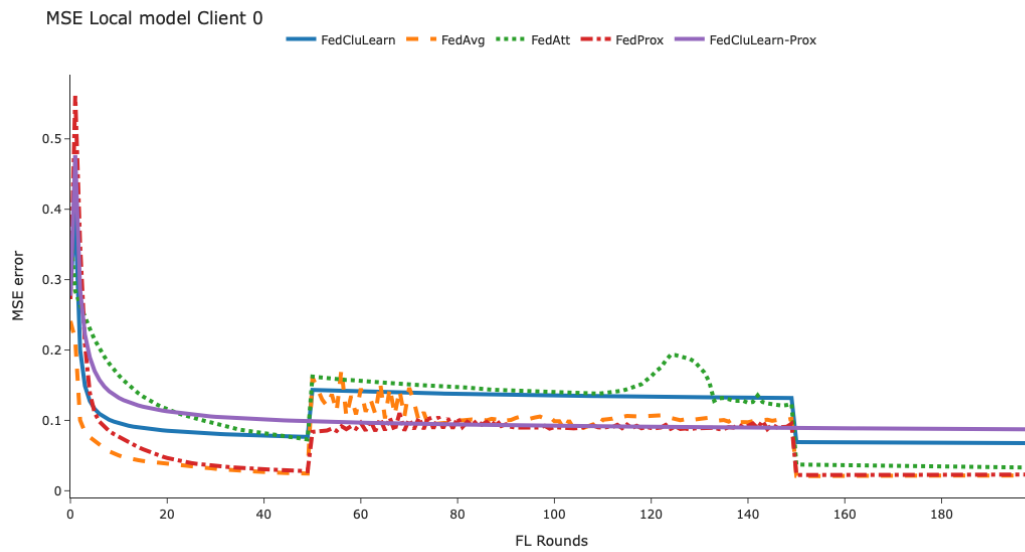
local_FedCluLearn_Prox = 'results/results_FedCluLearn_Prox_2025-02-26_12_05_46.
↳452219.txt'
global_FedCluLearn_Prox = 'results/
↳global_model_evaluation_FedCluLearn_Prox_2025-02-26_12_05_46.452219.txt'

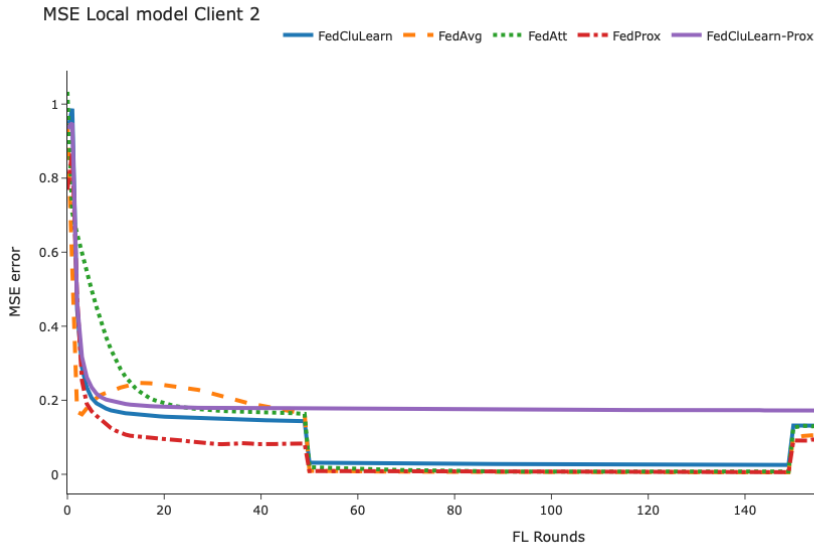
[3]: local_filenames = [local_FedCluLearn, local_FedAvg, local_FedAtt,
↳local_FedProx, local_FedCluLearn_Prox]
global_filenames = [global_FedCluLearn, global_FedAvg, global_FedAtt,
↳global_FedProx, global_FedCluLearn_Prox]
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[4]: mse_column = 'mse'
n_rounds, 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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[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)
# 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)
```

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[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)
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    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')

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[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')

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