

## control\_experiment\_5G\_A1\_percentage

May 29, 2025

```
[ ]: import importlib
import src.plots

importlib.reload(src.plots)

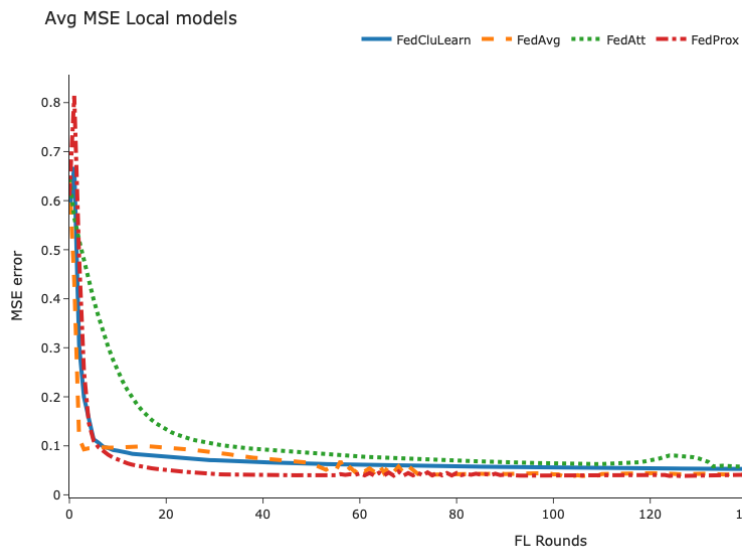
[ ]: <module 'src.plots' from '/Users/milenaangelova/git-repo/FedClust/src/plots.py'>

[ ]: from src.plots import plot_plotly, preprocessing_results

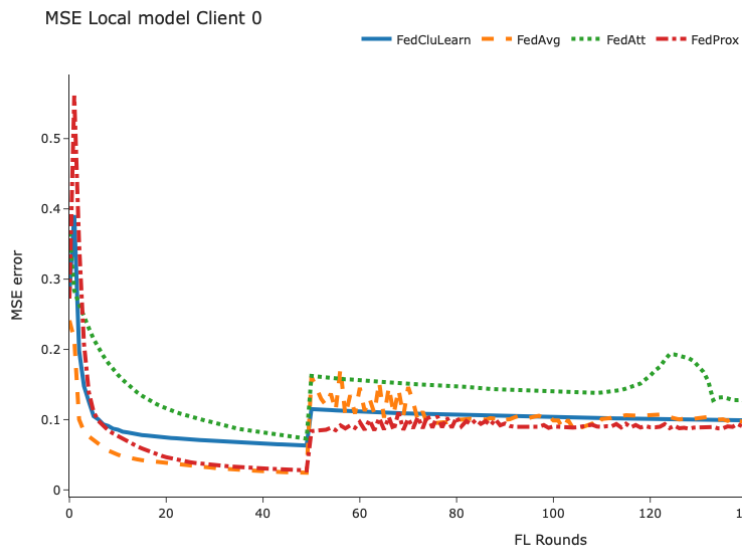
[ ]: local_FedAvg = 'results/results_FedAvg_2025-02-05 11:02:59.570648.txt'
global_FedAvg = 'results/global_model_evaluation_FedAvg_2025-02-05 11:02:59.
↳570648.txt'
local_FedCluLearn = 'results/results_FedCluLearn_2025-02-07 16:25:15.308613.txt'
global_FedCluLearn = 'results/global_model_evaluation_FedCluLearn_2025-02-07 16:
↳25:15.308613.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 12:07:39.
↳756286.txt'
global_FedCluLearn_Prox = 'results/
↳global_model_evaluation_FedCluLearn_Prox_2025-02-26 12:07:39.756286.txt'

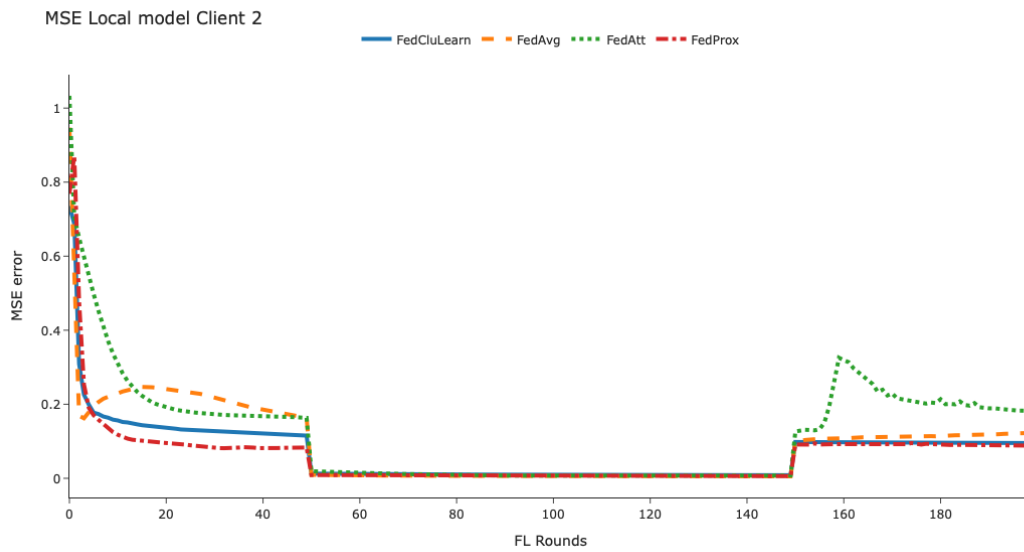
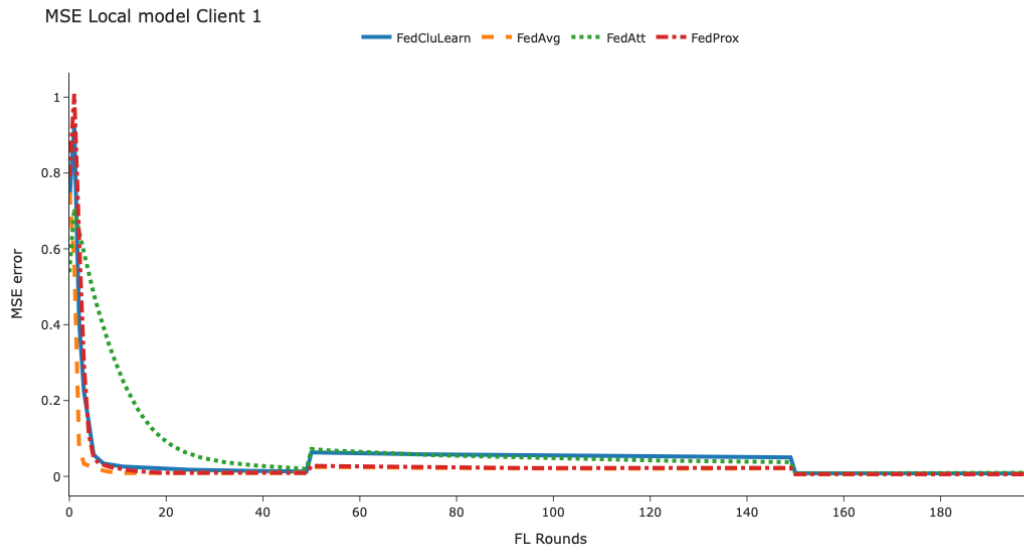
[ ]: local_filenames = [local_FedCluLearn, local_FedAvg, local_FedAtt,
↳local_FedProx, local_FedCluLearn_Prox]
global_filenames = [global_FedCluLearn, global_FedAvg, global_FedAtt,
↳global_FedProx, global_FedCluLearn_Prox]

[ ]: 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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[ ]: 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')
```



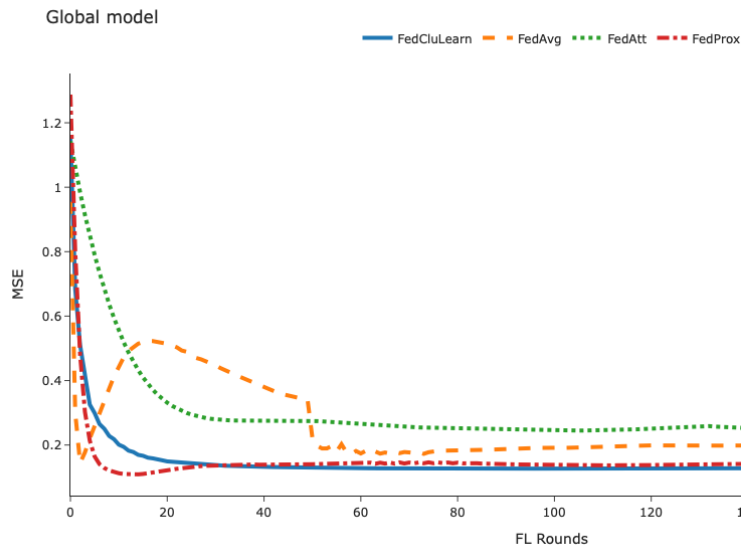


```
[ ]: mse_column = 'mse'
# n_rounds, y = preprocessing_results(filenamees=[global_FedCluLearn,
↳ global_FedCluLearn_recent, global_FedCluLearn_percentage, global_FedAvg,
↳ global_FedAtt, global_FedProx, global_FedCluLearn_Prox,
↳ global_FedCluLearn_Prox_recent, None], mse_column=mse_column)
# global_filenames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

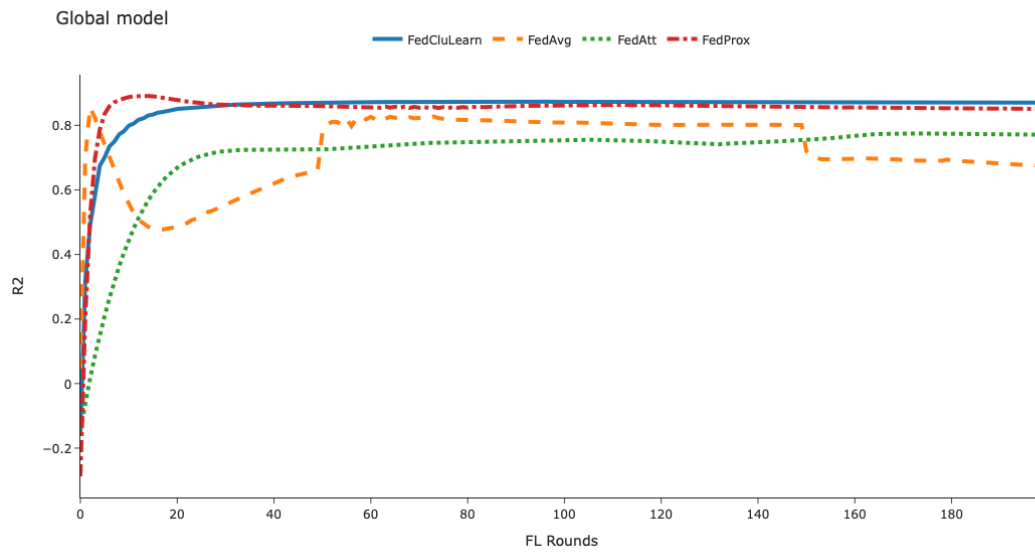
```



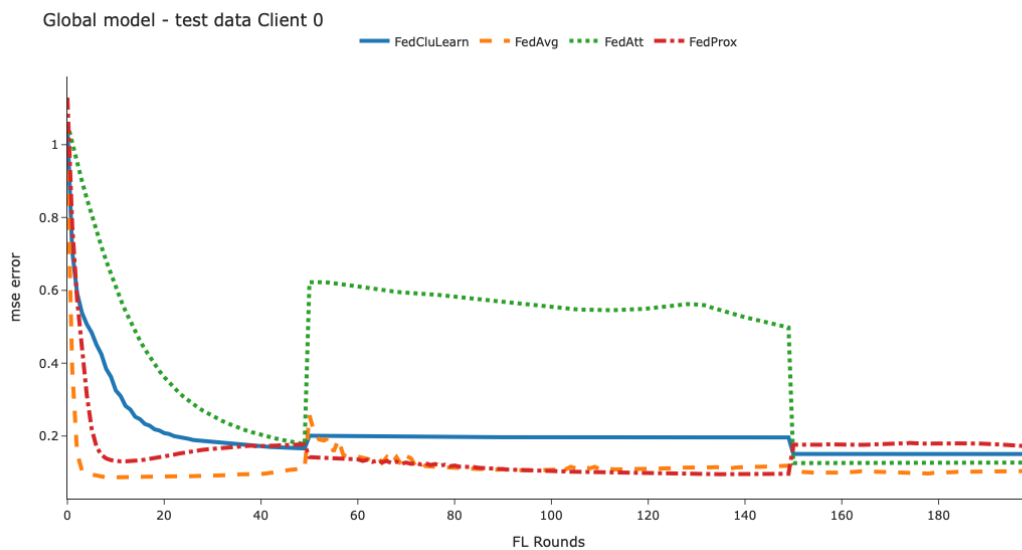
```

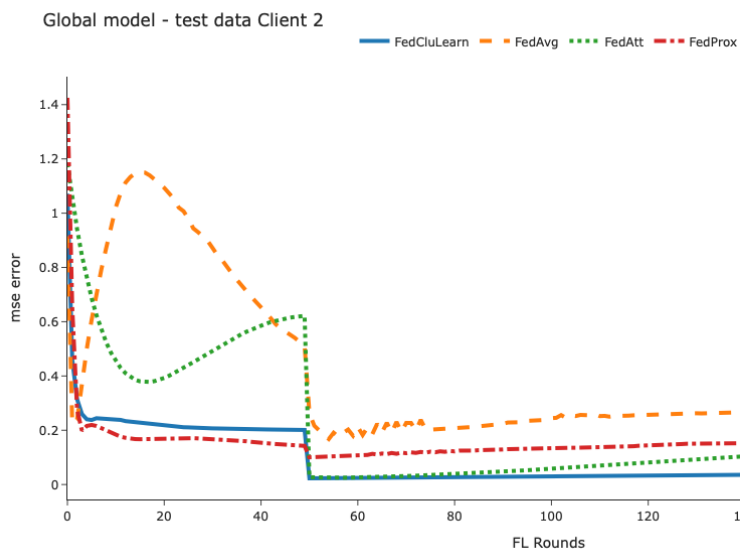
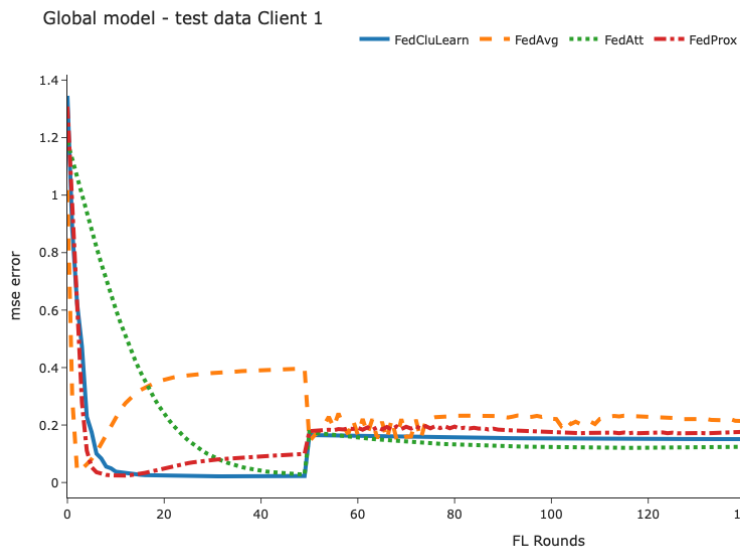
[ ]: mse_column = 'r2'
global_filenames = [global_FedCluLearn, global_FedAvg, global_FedAtt,
                    ↪global_FedProx, global_FedCluLearn_Prox]
n_rounds, y = preprocessing_results(filenamees=global_filenames,
                    ↪mse_column=mse_column)
plot_plotly(n_rounds, y, title=f'Global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

```



```
[ ]: 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')
```





```
[ ]: 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')
```

```
[ ]: 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')
```