



Akademia Górniczo-Hutnicza  
im. Stanisława Staszica w Krakowie

AGH University of Science  
and Technology

# nETFRAStructure

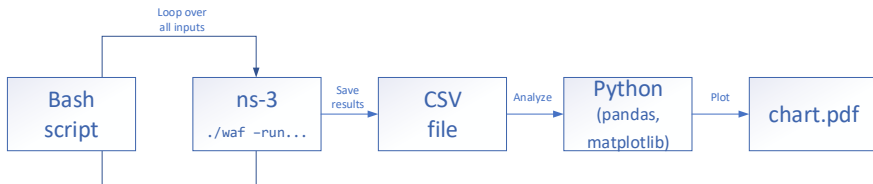
an Exemplary Text-based  
Framework for Running and  
Analyzing Simulations in ns-3

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# The nETFRAStructure Workflow



# CSV Table Structure



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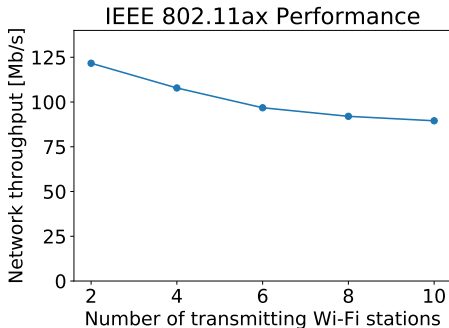
www.agh.edu.pl

Timestamp	nWifi	RngRun	FlowId	Throughput
2020-06-13 07:05	2	1	1	59.8334
2020-06-13 07:05	2	1	2	61.982
2020-06-13 07:06	4	1	1	27.0701
2020-06-13 07:06	4	1	2	27.8097
2020-06-13 07:06	4	1	3	26.2938
2020-06-13 07:06	4	1	4	25.932
...	...	...	...	...

# Generating Charts



```
df = pd.read_csv('he-wifi-performance.csv')  
df2 = df.groupby(['nWifi', 'RngRun'])['Throughput'].sum()  
df2.groupby(['nWifi'])['Throughput'].mean().plot()
```



# Advantages



- Rapid deployment
- Quick to learn and explain
- Easy to share code & results
- Decouples simulation & analysis
- Modular approach
- Output results in human-readable format
- Supports parallel simulation execution
- Good introduction to SEM

# Disadvantages



- Does not automate running of “missing experiments”
- Specifying a parameter space requires modifying the bash script
- Lack of seamless integration with cluster-based resource management tools

SEM resolves these issues

<https://simulationexecutionmanager.readthedocs.io/>

# Links



www.agh.edu.pl

GitHub Repo

<https://github.com/SzymonSzott/ns-3-netfrastructure>

Homepage

<https://szymonszott.github.io>

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