

# VisuaLLM : Playground for Seq2Seq Generation

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## Plug in your LM & dataset and see what's going on inside!

### Set Up a Generation Playground

```
Generation(  
  dataset=dataset,  
  model=model,  
  tokenizer=tokenizer,  
  selectors={  
    "do_sample": CheckBoxSelectorType(False),  
    "top_k": MinMaxSelectorType(0, 1000),  
    "max_new_tokens": MinMaxSelectorType(10, 100, default_value=30),  
    "num_return_sequences": MinMaxSelectorType(1, 20),  
  },  
  metrics_on_probs={  
    "Perplexity": ProbsMetric("{:.5f}", False, Perplexity())  
  },  
  metrics_on_generated_text={  
    "F1-Score": GeneratedTextMetric("{:.2%}", True, F1Score())  
  },  
)
```

Prepared for HuggingFace Datasets 🤗

Prepared for HuggingFace Transformers 🤗

Specify Generation Parameters

Specify Metrics (Compliant with TorchMetrics)

Dataset Settings

Select Dataset Split: train | Select Dataset Sample: 0

Send Dataset Configuration

Generation Parameters

do\_sample:  | top\_k: 0 | max\_new\_tokens: 30 | num\_return\_sequences: 1

Send Generation Configuration

Metrics on Target

"You must be very fast. Hunting is one of my favorite hobbies."

F1-Score: 100.00% | Perplexity: 2.81954

Metrics on Generated Outputs

"I'm getting ready to go hunting. I'm getting ready to go hunting. I'm getting ready to go hunting. I'm getting ready to go"

F1-Score: 5.1% | Perplexity: 5.84453

### Go Through Generation Step by Step

```
NextTokenPrediction(model=model, tokenizer=tokenizer, dataset=dataset)
```

Model Inputs

I had a gig at local theater last night. I work as a stand up comedian. I come from a small town. My favorite drink is Cuba libre. I did a few small roles in tv series. We all live in a yellow submarine, a yellow submarine. Morning! I'm a big

Next Token Probabilities:

- Ġfan 19.666%
- Ġguy 3.015%
- Ġbeliever 1.127%
- Ġdrink 1.106%
- . 1.08%
- Ġgirl 1.07%
- Ġred 1.069%
- Ġwhite 1.001%

Select "Ġfan"

see model inputs as tables or text

see each token's probability distribution

steer the generation manually

modular: you have total control over appearance

### Visualize Dataset Samples

BOT Persona

Trait

I had a gig at local theater last night.

I work as a stand up comedian.

I come from a small town.

My favorite drink is Cuba libre.

I did a few small roles in tv series.

Turns

Who	Turn
OTHER	We all live in a yellow submarine, a yellow submarine. Morning!

Model Inputs

I had a gig at local theater last night. I work as a stand up comedian. I come from a small town. My favorite drink is Cuba libre. I did a few small roles in tv series. We all live in a yellow submarine, a yellow submarine. Morning! I'm a big

### Customize to your liking

```
table_element = TableElement()  
headers = ["No.", "Turn"]  
rows = [  
  [i, x]  
  for i, x in enumerate(  
    [  
      "This is first row",  
      "This is second row",  
      "This is third row",  
      "This is fourth row",  
      "This is fifth row",  
    ]  
  )  
]  
TABLE_NAME = "Table1 is a Great Table"  
table_element.add_table(TABLE_NAME, headers, rows)
```

No.	Turn
0	This is first row
1	This is second row
2	This is third row
3	This is fourth row
4	This is fifth row

each Python element has its Vue.js counterpart

frontend automatically recreates itself based on schema sent by the library

```
number_selector_element = MinMaxSubElement(  
  sample_min=0, sample_max=10, text="Select Number:"  
)  
choices_element = ChoicesSubElement(  
  choices=["super", "magnificent", "incredible"], text="This library is:"  
)  
checkbox_element = CheckBoxSubElement(text="Have you slept?:")  
button_element = ButtonElement(  
  processing_callback=on_button_clicked,  
  subelements=[  
    number_selector_element,  
    choices_element,  
    checkbox_element,  
  ],  
)
```

you can extend components without touching the frontend

Select Number: 0 | This library is: super | Have you slept?:

Select

## Try it!

> pip install visuallm

<https://github.com/gortibaldik/visuallm>

Presented at INLG 2023, Prague.

Supported by the project TL05000236 AI asistent pro žáky a učitele co-financed by the Technological Agency of the Czech Republic and by the ERC (No. 101039303 NG-NLG). Resources provided by the LINDAT/CLARIAH-CZ Research Infrastructure.



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