# Summary on controllable text generation

## Definition

Controlled text generation refers to the process of generating text that adheres to specific constraints or desired attributes. Instead of producing random or generic text, it focuses on creating text that aligns with predefined criteria, such as sentiment, style, or topic. This involves guiding the text generation process to meet certain conditions or fulfill specific requirements.

## Types of control

### Content control

#### 1.1 Format control

Method : (1) external LLM for instruction following validation

(2) synthetic data for controllability enhancement

Zhaoyang Wang, Jinqi Jiang, Huichi Zhou, Wenhao Zheng, Xuchao Zhang, Chetan Bansal, and Huaxiu Yao. 2025. [Verifiable Format Control for Large Language Model Generations](https://aclanthology.org/2025.findings-naacl.194/). In *Findings of the Association for Computational Linguistics: NAACL 2025*

#### 1.2 Specific requirement (response quality, user constraint, etc)

Method : predefined rules + prompt

Ming Li, Han Chen, Chenguang Wang, Dang Nguyen, Dianqi Li, and Tianyi Zhou. 2025. [RuleR: Improving LLM Controllability by Rule-based Data Recycling](https://aclanthology.org/2025.naacl-short.78/). In *Proceedings of the 2025 Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics*

### Attribute (sentiment, tone, style, etc) control

Method : modeling the attribute-controllable generation process as a probability distribution consisting of multiple sub distributions corresponding to multiple attributes.

Zhe Yang, Yi Huang, Yaqin Chen, XiaotingWu XiaotingWu, Junlan Feng, and Chao Deng. 2025. [Palette of Language Models: A Solver for Controlled Text Generation](https://aclanthology.org/2025.naacl-long.497/). In *Proceedings of the 2025 Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics*