

# Human-Computer Interaction and Visualization in Natural Language Generation Models: Applications, Challenges, and Opportunities

**Yunchao WANG, Guodao SUN, Zihang FU,  
Ronghua LIANG**

Frontiers of Computer Science, DOI: [10.1007/s11704-025-50356-6](https://doi.org/10.1007/s11704-025-50356-6)

# Problems & Ideas

- Issues with existing surveys on text generation based on NLG models:
  - Current surveys have not integrated HCI and visualization in the text generation process, limiting model understanding and application.
  - Visualization plays a critical role in enhancing NLG model interpretability, while HCI facilitates collaboration between users and models during training, expanding the user base.
- Ideas: Approaching from the perspectives of HCI and visualization, the landscape of text generation based on NLG models is outlined to help practitioners benefit from a broader spectrum of research outcomes.



