Doctoral Thesis Evaluation Report
Candidate: Anton Razzhigaev
Program: Computational and Data Science and Engineering
Thesis: Crossroads of Text, Vision, and Graph Models: Advancing Multimodal Systems
Supervisor: Associate Professor Alexander Panchenko

Anton Razzhigaev's doctoral thesis presents a comprehensive investigation into advanced representation learning techniques across multiple domains of artificial intelligence. The work demonstrates a cohesive approach to integrating language processing, visual synthesis, and knowledge-based systems.

The research makes significant contributions in several areas. The M3M system for multilingual Knowledge Graph Question Answering showcases an innovative approach to cross-lingual information retrieval. The Kandinsky model for text-to-image synthesis represents a notable advancement in generative AI, particularly in its use of image prior and latent diffusion techniques.

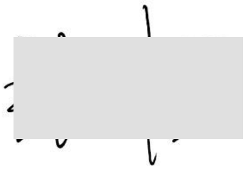
Of particular interest is the analysis of transformer architectures, revealing linear properties in embedding transformations between layers. This finding has potential implications for model optimization and efficiency. The study of anisotropy and intrinsic dimensions in these models provides valuable insights into their internal representations.

The development of the OmniDialog benchmark and the OmniFusion model addresses an important gap in multimodal dialogue systems, offering a robust framework for evaluation and development in this emerging field.

Razzhigaev's work is characterized by thorough experimental design and rigorous evaluation. The practical implementations, including open-source releases and web-based demonstrations, enhance the potential impact of this research on the broader scientific community.

The quality of the research is evidenced by publications in highly regarded venues, including those with CORE A* rankings. This external validation underscores the significance and novelty of the work.

Based on the originality, depth, and potential impact of this research, I recommend Anton Razzhigaev for the award of a doctoral degree.



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