

cases	doc_1		doc_2		decision	id
	authors	<ul style="list-style-type: none">Nihal JainDejiao ZhangWasi Uddin AhmadZijian WangFeng NanXiaopeng LiMing TanRamesh NallapatiBaishakhi RayParminder BhatiaXiaofei MaBing Xiang	authors	<ul style="list-style-type: none">Ahmad, Wasi UddinBhatia, ParminderJain, NihalLi, XiaopengMa, XiaofeiNallapati, RameshNan, FengRay, BaishakhiTan, MingWang, ZijianXiang, BingZhang, Dejiao	DUPLICATES	122
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	abstract	Despite exciting progress in large-scale language generation, the expressiveness of its representations is severely limited by the \textit{anisotropy} issue where the hidden representations are distributed into a narrow cone in the vector space. To address this issue, we present ContraGen, a novel contrastive learning framework to improve the representation with better uniformity and discrimination. We assess ContraGen on a wide range of downstream tasks in natural and programming languages. We show that ContraGen can effectively enhance both uniformity and discrimination of the representations and lead to the desired improvement on various language understanding tasks where discriminative representations are crucial for attaining good performance. Specifically, we attain \$44\%\$ relative improvement on the Semantic Textual Similarity tasks and \$34\%\$ on Code-to-Code Search tasks. Furthermore, by improving the expressiveness of the representations, ContraGen also boosts the source code generation capability with \$9\%\$ relative improvement on execution accuracy on the HumanEval benchmark.	abstract	Despite exciting progress in large-scale language generation, the expressiveness of its representations is severely limited by the \textit{anisotropy} issue where the hidden representations are distributed into a narrow cone in the vector space. To address this issue, we present ContraGen, a novel contrastive learning framework to improve the representation with better uniformity and discrimination. We assess ContraGen on a wide range of downstream tasks in natural and programming languages. We show that ContraGen can effectively enhance both uniformity and discrimination of the representations and lead to the desired improvement on various language understanding tasks where discriminative representations are crucial for attaining good performance. Specifically, we attain \$44\%\$ relative improvement on the Semantic Textual Similarity tasks and \$34\%\$ on Code-to-Code Search tasks. Furthermore, by improving the expressiveness of the representations, ContraGen also boosts the source code generation capability with \$9\%\$ relative improvement on execution accuracy on the HumanEval benchmark.Comment: 10 page		
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