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	authors	- Jianmo Ni - Gustavo Hern'andez 'Abrego - Noah Constant - Ji Ma - Keith B. Hall - Daniel Matthew Cer - Yinfei Yang	authors	- Jianmo Ni - Gustavo HernÃ¡ndez Ãbrego - Noah Constant - Ji Ma - Keith B. Hall - Daniel Cer - Yinfei Yang		
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	abstract	We provide the first exploration of sentence embeddings from text-to-text transformers (T5) including the effects of scaling up sentence encoders to 11B parameters. Sentence embeddings are broadly useful for language processing tasks. While T5 achieves impressive performance on language tasks, it is unclear how to produce sentence embeddings from encoder-decoder models. We investigate three methods to construct Sentence-T5 (ST5) models: two utilize only the T5 encoder and one using the full T5 encoder-decoder. We establish a new sentence representation transfer benchmark, SentGLUE, which extends the SentEval toolkit to nine tasks from the GLUE benchmark. Our encoder-only models outperform the previous best models on both SentEval and SentGLUE transfer tasks, including semantic textual similarity (STS). Scaling up ST5 from millions to billions of parameters shown to consistently improve performance. Finally, our encoder-decoder method achieves a new state-of-the-art on STS when using sentence embeddings.	abstract	We provide the first exploration of sentence embeddings from text-to-text transformers (T5). Sentence embeddings are broadly useful for language processing tasks. While T5 achieves impressive performance on language tasks cast as sequence-to-sequence mapping problems, it is unclear how to produce sentence embeddings from encoder-decoder models. We investigate three methods for extracting T5 sentence embeddings: two utilize only the T5 encoder and one uses the full T5 encoder-decoder model. To support our investigation, we establish a new sentence representation transfer benchmark, SentGLUE, which extends the SentEval toolkit to nine tasks from the GLUE benchmark. Our encoder-only models outperforms Sentence-BERT and SimCSE sentence embeddings on both SentEval and SentGLUE transfer tasks, including semantic textual similarity (STS). Scaling up T5 from millions to billions of parameters is found to produce consistent further improvements. Finally, our encoder-decoder method achieves a new state-of-the-art on STS when using sentence embeddings. Our models are released at https://tfhub.dev/google/collections/sentence-t5/1.		
	versions		versions			