



DSBA Transformer survey paper study

A Survey of Transformers

#0: Introduction

arXiv preprint



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A Survey of Transformers

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Transformers have achieved great success in many artificial intelligence fields, such as natural language processing, computer vision, and audio processing. Therefore, it is natural to attract lots of interest from academic and industry researchers. Up to the present, a great variety of Transformer variants (a.k.a. X-formers) have been proposed, however, a systematic and comprehensive literature review on these Transformer variants is still missing. In this survey, we provide a comprehensive review of various X-formers. We first briefly introduce the vanilla Transformer and then propose a new taxonomy of X-formers. Next, we introduce the various X-formers from three perspectives: architectural modification, pre-training, and applications. Finally, we outline some potential directions for future research.

CCS Concepts: • **General and reference** → **Surveys and overviews**; • **Computing methodologies** → **Artificial intelligence**.

Additional Key Words and Phrases: Transformer, Self-Attention, Pre-trained Models, Deep Learning

<https://arxiv.org/pdf/2106.04554.pdf>

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Introduction

스터디 소개







KOREA UNIVERSITY



DSBA

Data Science & Business Analytics

yukyung	myeongsup	hoonsang	jina	jaehyuk	subin
					

총 6명의 스터디원으로 구성됨

01) Transformer basic (1~6 Page)

- 영상 / [발표자료](#)
- 주제 : Vanilla Transformer
- 스터디 진행 : 7/20
- 발표자 : 김수빈 석박통합과정

02) Module-level : Attention 1 (6~11 Page)

- 영상 / [발표자료](#)
- 주제 : Sparse Attention
- 스터디 진행 : 7/21
- 발표자 : 윤훈상 석사과정

03) Module-level : Attention 2 (11~15 Page)

- 영상 / [발표자료](#)
- 주제 : Linearized / Prototype / Memory Compress Attention
- 스터디 진행 : 7/27
- 발표자 : 김지나 석박통합과정

04) Module-level : Attention 3 (15~20 Page)

- 영상 / [발표자료](#)
- 주제 : LowRank SelfAttention / Attention with Prior / Improved Multi-Head Mechanism
- 스터디 진행 : 7/28
- 발표자 : 이유경 석박통합과정

05) Module-level : Others (20~26 Page)

- 영상 / [발표자료](#)
- 주제 : Position Encoding / LayerNorm / FFN
- 스터디 진행 : 7/29
- 발표자 : 허재혁 석사과정

06) Arch.-level ~ end (26~33 Page)

- 영상 / [발표자료](#)
- 주제 : Architecture-level variant
- 스터디 진행 : 7/30
- 발표자 : 김명섭 석박통합과정

07) Appendix : 당신이 모르는 transformer의 3가지 사실

- 영상 / [발표자료](#)
- 주제 : [Transformer] Complexity, Parameters, and Scaling
- 스터디 진행 : 7/28
- 발표자 : 김명섭 석박통합과정

총 6번의 논문 리뷰 세션과 한번의 추가 세션으로 구성

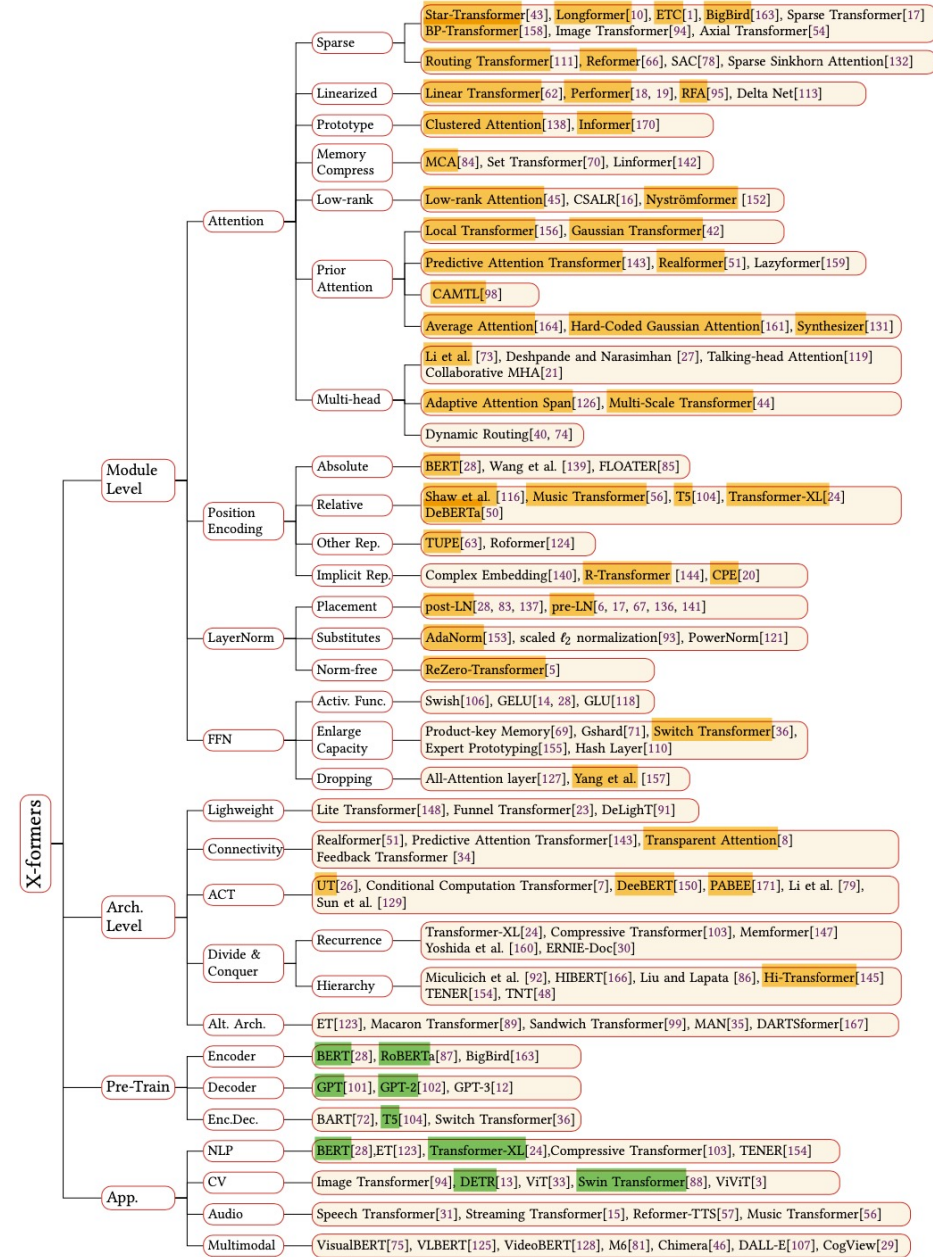


Fig. 3. Taxonomy of Transformers

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👉 Transformer_Survey_Paper_Study 👉



"A survey of Transformer" paper study @DSBA Lab

📄 Paper : Lin, Tianyang, et al. "A Survey of Transformers." *arXiv preprint arXiv:2106.04554* (2021) [[Link](#)]

발표에 사용된 모든 발표자료와, 발표 영상은 아래의 깃허브에 공개하였음

https://github.com/yukyunglee/Transformer_Survey_Study

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스터디 소개



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구독자 4.35천명

구독

연구실 유튜브 채널에 Transformer Survey Study 재생목록에서 영상 확인 가능

<https://www.youtube.com/channel/UCPq01cgCcEwhXI7BvcwlQyg/videos>