



Contribution ID: 146

Tür: Oral Presentation

Why Firth Matters More Than Chomsky in the Age of AI?

20 Aralık 2024 Cuma 09:00 (30 dakika)

While Noam Chomsky's Universal Grammar (UG) theory dominated linguistics for decades (Chomsky, 1957), its emphasis on innate syntactic structures turned out not be the optimal foundation for AI applications. J.R. Firth's functionalist approach, however, offered a compelling alternative due to its focus on context in deriving meaning. This renewed relevance stems from the striking parallels between Firth's ideas and the core principles behind sequence-to-sequence (seq2seq) algorithms, a dominant force in modern NLP.

Firth famously argued "you shall know a word by the company it keeps" (Firth, 1957). This emphasizes how a word's meaning arises from its co-occurrence with other words in specific situations. This aligns perfectly with seq2seq models. These algorithms are trained on vast amounts of text data, where the order and co-occurrence of words within a sequence (e.g., a sentence) are crucial for understanding meaning and generating appropriate responses (Sutskever et al., 2014).

Firth's concept of "context" further strengthens this connection. He recognized that language use adapts to different contexts (registers) –formal writing versus informal speech, for instance (Firth, 1957). Similarly, seq2seq models are trained on different datasets tailored for specific purposes, like generating formal emails or casual social media posts. This contextual adaptability is essential for AI to interact effectively in the real world (Liu et al., 2016).

Firth's emphasis on "social context" goes beyond mere word co-occurrence. He recognized the influence of the speaker, audience, and purpose on language use (Firth, 1957). This resonates with the growing recognition within AI development that language is not merely a formal system but a product of social interaction.

In conclusion, Chomsky's UG has undoubtedly influenced linguistics (Chomsky, 1957). However, Firth's focus on context aligns more closely with seq2seq algorithms and the broader goals of AI in NLP. As we strive for truly intelligent language models, Firth's emphasis on co-occurrence, register variation, and social context offers a valuable framework for developing more robust and adaptable AI that can navigate the complexities of human communication.

Keywords: Chomsky, Firth, AI, context, seq2seq

Presentation language / Sunum Dili

EN (English)

Disciplines / Disiplinler

Linguistics / Dilbilim

E-mail / E-posta

yasin.tasdemir@istanbul.edu.tr

Institution / Affiliation / Kurum

İstanbul University

Country / Ülke

Türkiye

ORCID ID

0000-0002-9676-8561

Başlıca yazarlar:: Yasin Taşdemir (İstanbul Üniversitesi)

Sunu yapanlar: Yasin Taşdemir (İstanbul Üniversitesi)

Session Classification: Session 1.1 (Day 3)

Track Classification: Congist'24: Interdisciplinary Approaches