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Deterministic Coreference Resolution Based on Entity-Centric, Precision-Ranked Rules

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Deterministic Coreference Resolution Based on Entity-Centric, Precision-Ranked Rules

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We propose a new deterministic approach to coreference resolution that combines the global

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information and precise features of modern machine-learning models with the transparency and modularity of deterministic, rule-based systems. Our sieve architecture applies a battery of deterministic coreference models one at a time from highest to lowest precision, where each model builds on the previous model's cluster output. The two stages of our sieve-based architecture, a mention detection stage that heavily favors recall, followed by coreference sieves that are precision-oriented, offer a powerful way to achieve both high precision and high recall. Further, our approach makes use of global information through an entity-centric model that encourages the sharing of features across all mentions that point to the same real-world entity. Despite its simplicity, our approach gives state-of-the-art performance on several corpora and genres, and has also been incorporated into hybrid state-of-the-art coreference systems for Chinese and Arabic. Our system thus offers a new paradigm for combining knowledge in rule-based systems that has implications throughout computational linguistics.

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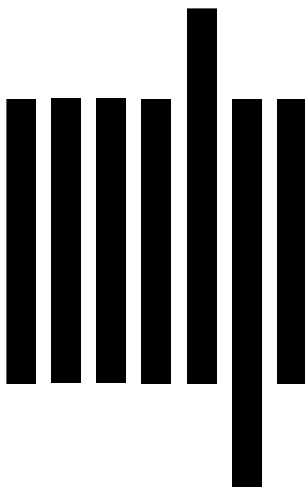
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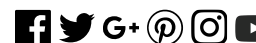Terms & Conditions

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