Causal relations represent a significant fraction of the intermediate-level semantics of a text. I am defining an annotation scheme for the explicit causal relations in a text, including such metadata as the polarity and the type of causation (motivation, consequence, etc). The triggers in the scheme can be arbitrary constructional realizations of causation, including argument realization structures, discourse relations, and idiomatic constructions.

I am working with annotators to build an annotated newswire corpus using this scheme. I am also building a tagger that will be trained and evaluated on this corpus. The system combines random forests with learned TRegex patterns over dependency parses to identify and classify unseen instances of causal relations.

It would take you 20 years to read the articles we publish online every day. The only way we’ll be able to harness this information overload is if our computers can help us extract the key information – but even state-of-the-art software can interpret only the simplest English statements. As a first step toward more sophisticated interpretation, I’m building a system to extract one of the most common and useful types of information: statements about cause and effect (e.g., “smoking leads to cancer”). To teach the system what such expressions look like, I am first building a collection of documents in which humans have manually flagged and analyzed cause-and-effect language. From these documents, the system will learn to extract different kinds of cause-and-effect language, ultimately allowing us to see at a glance the key arguments being made.