## FACTORIE:

## Probabilistic Programming via Imperatively Defined Factor Graphs

Andrew McCallum, Karl Schultz, Sameer Singh Department of Computer Science, University of Massachusetts, Amherst

**FACTORIE** is a new library for representing factor graphs that ...

- Preserves the semantics of factor graphs
  - variables, factors, possible worlds, scores, partition functions, etc.
- Allows use of natural intuition in specifying model construction & operation
  - via imperative hooks (pieces of procedural code)
- Easily integrates declarative and procedural domain knowledge
- Allows efficient inference and learning over large, complex graphs
- Gives significant gains in speed and accuracy



Cora Dataset	Segmentation F1	Coreference F1
Joint MLN	98.4	95.6
Isolated IDF	98.51	96.22
Joint IDF	98.72	96.71

New state-of-the-art results!!



