Decoding in Unified Hypergraph Framework

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May 17, 2008
Chart Parsing

- Earley Parsing → top down
- CKY and CKY+ Parsing → bottom down
Phrase Based Translation

- Stacks of translation options
- Trace a path
- Equivalent to a finite state search
Foundations for Hierarchical Models and Modular Search

- Chris Dyer
- Josh Schroeder
- Phil Blunsom
- Lane Schwartz
- Adam Lopez
- Chris Callison-Burch
Foundations for Hierarchical Models and Modular Search

- Parsing as hypergraph search - Klein & Manning (2001)
- Prepared part of a prototype implementation
Existing Java Code

- CKY+ chart parsing framed as a hypergraph
- Calculate inside probabilities
- Cube pruning
Future Work

- Single common hypergraph framework for diverse algorithms
- Phrase based decoding
- Hierarchical phrase based decoding
- New, exotic decoding!