

AI for Business



Michael Karasick, PhD
VP, Cognitive Computing Research



Games Provide a Laboratory for Reasoning



Winning A Game Based on Natural Language



Trip PlanningTax PlanningComplexity

Metro Schedule

US Tax Code

Cost

Schedule change

Tax changes

Depth

Compare trips

Compare deductions

Understanding A Movie

Movie

Understanding A Movie

Scene

Movie

Understanding A Movie

Boy Girl Night Soft Music Candles

Scene

Movie

Understanding A Movie

Romantic Scene

Boy

Girl

Night

Soft Music

Candles

Scene

Movie

Understanding An Obligation

Financial Obligation

“You must...”

List of Constraints

Plot of Costs

Fragment

Regulatory Document

Encode Images of *Butter Knives* as Points

375 different images of a butter knife



Combining Encodings of Different *Knives*



A Simplified *Knife* Model



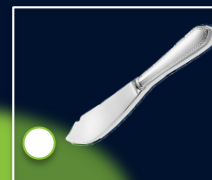
Machine Models Are Distance Functions

<Chef's Knife>

<Steak Knife>

<Butter Knife>

<Katana>



Machine Models Are Distance Functions

<Chef's Knife>



<Steak Knife>

<Butter Knife>

<Katana>

Analyzing a Movie Scene



Sentiment, Objects, Location





POWER7

POWER7

POWER7

WATSON

POWER7

AI for Business

- Systems learn and reason about what businesses know and do
- Machine learning models are used to do this
- These systems are as good as the models they use