



LinguaSys

Understand, Analyze, Translate

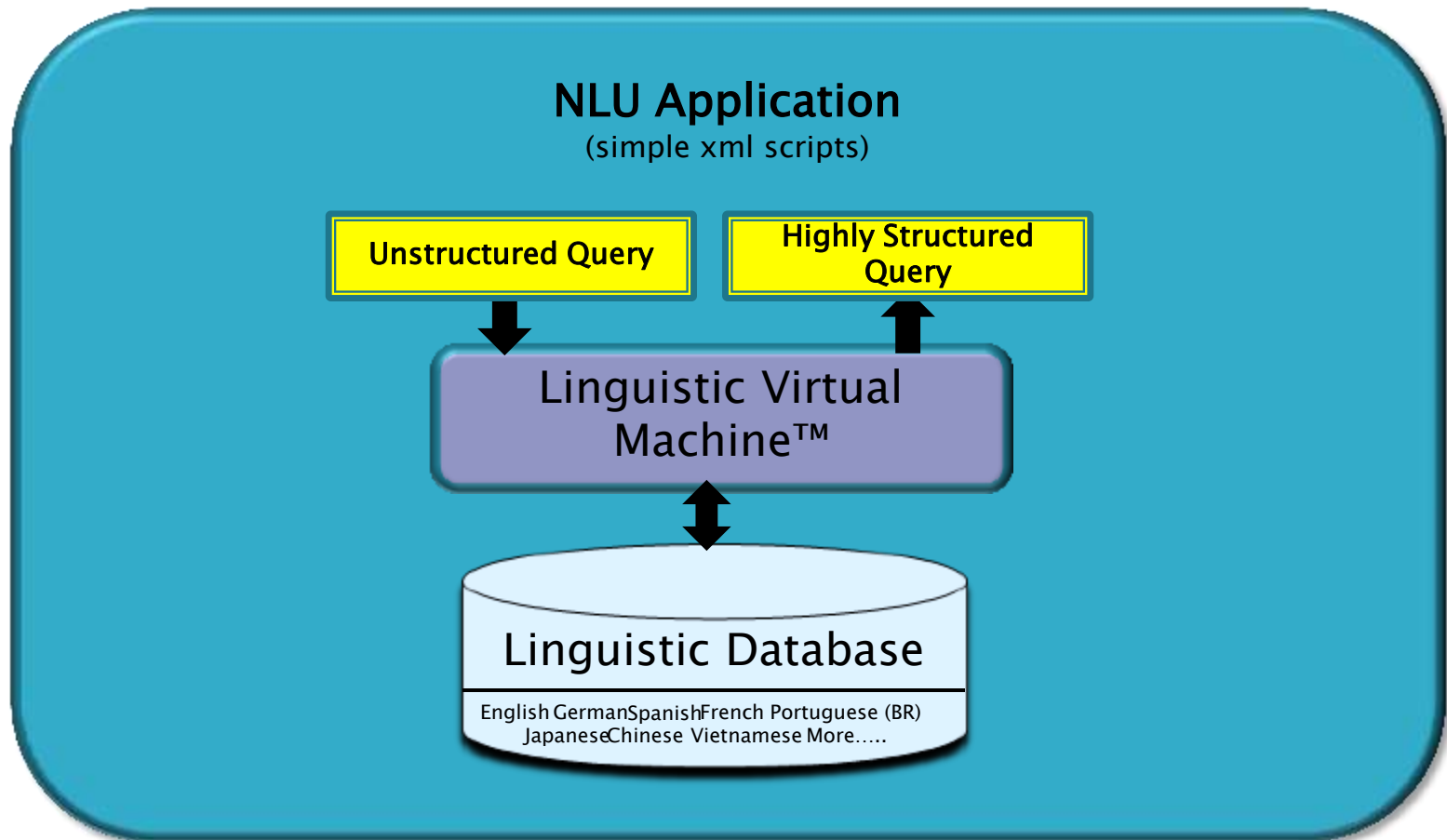
# Multi-Channel Multi- Lingual NLUI

For a Multi-Everything World

# Overview

- ▶ **New Paradigm in NLU Architecture**
  - Is it a statistical challenge, or an understanding problem?
    - How do we do it
      - Fast, Cheap, Accurate
      - Covering 10s of languages simultaneously
- ▶ **Multimodal/Multichannel Requirements**
  - People want to decide which channel is right for them at **THIS PLACE AND TIME**
    - In the airport – SMS or Twitter
    - In the car – Speech
    - At the Beach – SMS

# NLU is a Text Analytics problem!



# Concept-Centric Lexicons

Dictionary

Find substring

Links... Thesaurus

Locate 34500

Bulk update Bulk copy Validate Statistics

Language	Family ID	Text
English	34500	tank
English	34500	armored
English	34500	armoured
English	34500	army tank
English	34501	tanka
English	34502	tankard
English	34503	tank
English	34503	tank car
English	34504	tank circu
English	34505	tank dest
English	34506	tank locor
English	34506	tank engin
English	34507	tanker pla
English	34508	tank furna
English	34510	tank shel
English	34511	tank-top
English	34511	tanktop
English	34511	tanktop/ta
English	34511	tank top
English	34512	tannery
English	34513	tannoy
English	34514	tap

Dictionary

Find substring

Links... Thesaurus

Locate 34500

Bulk update Bulk copy Validate Statistics

Language	Family ID	Lemma / Description	Note	Mapping
日本語	34500	戦車		4487
日本語	34500	特車	[ENG] 'tank': an enclosed armored military vehicle; has a cannon and moves on caterpillar treads	49177
日本語	34500	タンク		55343
日本語	34501	短歌	RULE UNITS:	100435
日本語	34502	タンカー	Word class : noun	168918
日本語	34502	大型ジョ	Countability : countable	173087
日本語	34503	タンク車	Noun subclass : regular noun	60693
日本語	34503	水槽車	Adjective particle : , e i	164520
日本語	34504	タンク回	Animacy : inanimate	55058
日本語	34505	駆逐戦車	Agent : inanimate (something)	50990
日本語	34511	タンクト	Object / complement : inanimate object	60934
日本語	34512	皮なめし工場	Meta-domain : physical	173924
日本語	34512	革工場		100125
日本語	34512	タンヌリー	name	38906
日本語	34514	タップ		45625
日本語	34514	飲み口		45871
日本語	34514	蛇口		51653
日本語	34514	水道栓		52314
日本語	34514	コック		56380
日本語	34518	テープ		48100
日本語	34519	録音		46644
日本語	34519	テーピング		50027

Close Query Copy Insert Change Delete

# Open Linguistic Database

**Unit and Measures Definition Tables**

Table ID | Table Header

Rule Units       Style Units  
 Measure Domains       Measure Systems

ID	Header
1	Word class
2	Number contrast
3	Countability
4	Noun subclass
5	Gender
6	Determiner subclass
7	Ordering(determiners,...)
8	Verb subclass
9	Person
10	Verb tense form
11	Voice
12	Gradability
13	Grade
14	Sequence & transitivity
15	Morphological case
16	Number inflection pattern

Record ID | Description

ADJ	adjective
ADM	adj. used with modal verb
ADV	adverb
CJ	conjunction
DEM	demonstr. adj. (this one)
DET	determiner
EXST	existential 'there'
FORE	formulaic expression
INTJ	interjection
LW	foreign loanword
NOUN	noun
PART	particle
PDA	prep. + definite article
PREP	preposition
REF	dummy/prop/reference
SC	special code
VERB	verb

Close      Edit      Insert      Change      Delete

# Slang Handling

Dictionary

ID | Text | Map ID | Last Update | Links...

Thesaurus | Locate | 30743

Find substring |  | Bulk update | Bulk copy | Validate

Language	Family ID	Lemma / Description	Note
English	30743	Methedrine	
English	30743	glass	
English	30743	meth	
English	30743	deoxyephedrine	
English	30743	shabu	
English	30743	crank	
English	30743	ice	
English	30743	chalk	
English	30743	methamphetamine	an amphetamine derivative (trade name Methedrine) used in the form of a crystalline hydrochloride; used as a stimulant to the nervous system and as an appetite suppressant
English	30743	chicken feed	
English	30744	methapyrilene	RULE UNITS:
English	30745	Quaalude	Word class : noun
English	30745	methaqualone	Countability : uncountable
English	30746	Gemonil	Noun subclass : regular noun
English	30746	metharbital	Plural or declension : invariable
English	30747	Mandelamine	Animacy : inanimate
English	30747	Urex	Agent : inanimate (something)
English	30747	methenamine	Object / complement : inanimate object
English	30748	methicillin	Meta-domain : physical
English	30749	Robaxin	STYLE TAGS:
English	30749	methocarbamol	Medium : slang, jargon
English	30750	amethopterin	Field of activity : crime
English	30750	methotrexate	Ambiguity : high ambiguity
English	30750	methotrexate sodium	methotrexate sodium
English	30751	Aldomet	
English	30751	methyl dopa	
English	30751	alpha methyl dopa	alpha methyl dopa
English	30752	methylenedioxyamphetamine	"MDMA is often used at parties beca
English	30752	MDMA	"MDMA is often used at parties beca

# Cross-lingual Search

Question	wanna find <span style="border: 1px solid red;">chinese food</span> in doncaster	Domains	food
Location	<input type="text"/>		
Coordinates	<input type="text"/>		
Answer	<p>Tai Pan Licensed Restaurant Specialising In Cantonese And Beijing Cuisine 239 Blackburn Road Doncaster 03 9841 9977 Location: Doncaster Melbome <span style="border: 1px solid red;">Cantonese cuisine</span></p>	hyponyms of the argument	<pre>(suburb.NameCL LIKE '%T=56619\$%' OR muhi.NameCL LIKE '%T=56619\$%' OR province.NameCL LIKE '%T=56619\$%' OR of_IsAlias(suburb.LocationID,T=56619\$*)) AND (((feat.FeatureKind='CUIS') AND (feat.FeatureValue IN ('Chinese', 'Manchurian', 'Hakka', 'Mandarin', 'Cantonese', 'Sichuan'))) OR ((feat.FeatureKind='CUIS') AND feat.FeatureValueCL LIKE '%T=8983\$%' OR feat.FeatureValueCL LIKE '%T=8983\$%' OR feat.FeatureValueCL LIKE '%T=6673\$%' OR feat.FeatureValueCL LIKE '%T=9942\$%' OR</pre>

# Demos!





Next Steps?