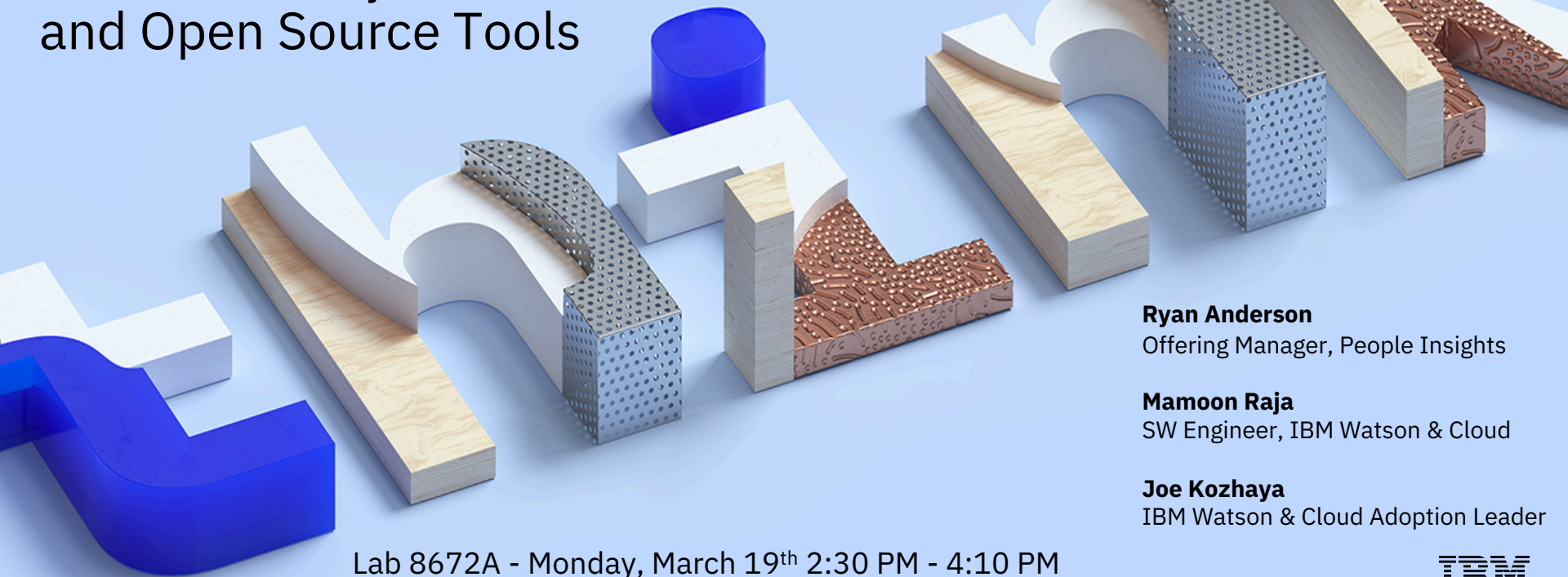


Call Center Instrumentation & Analytics

Data Discovery with IBM Watson
and Open Source Tools

think 2018



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Lab 8672A - Monday, March 19th 2:30 PM - 4:10 PM

Lab 8672B - Thursday, March 22nd 10:30 AM - 12:10 PM



Order of Operations

Welcome & Overview

Set-up & Credentials / Access

Step 1 – Speech to Text

Step 2 – Natural Language Understanding (NLU)

Step 3 – Natural Language Classifier (NLC)

Step 4 – Tone Analyzer

Step 5 - Visual Summary

Signals in Dark Data:

Actionable Insights

Enterprises spend more than \$1 trillion on 250 billion customer service calls each year

Unstructured "**dark data**" that arises from calls (literally 'voice of customer')

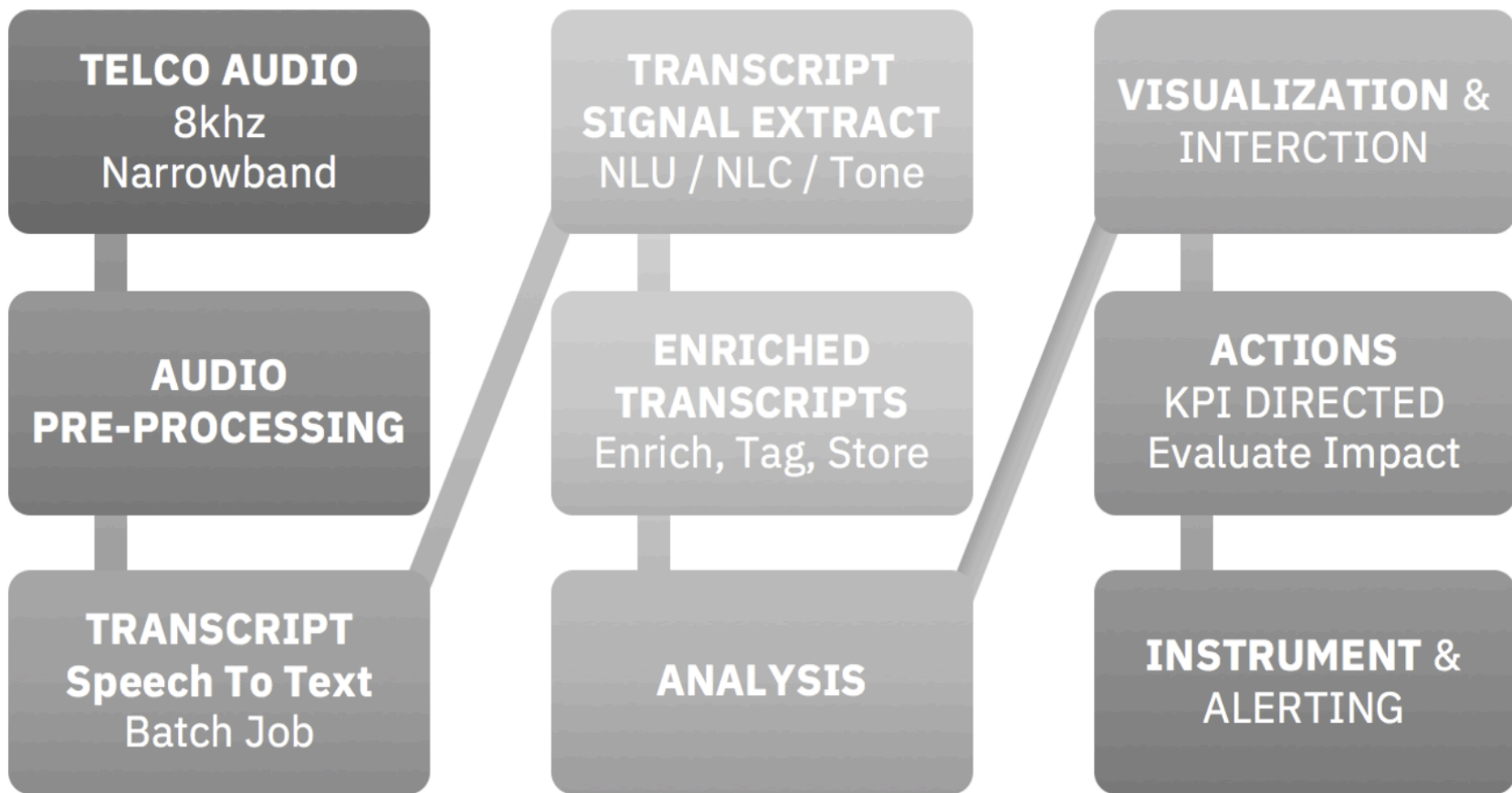
Lab is a starting point showing how to leverage multiple IBM Watson "signal services" (STT, NLC, NLU, and Tone) to extract the signal.

Actionable Insights:

Examples

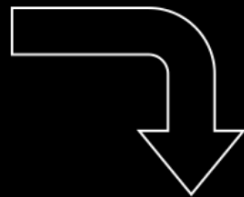
1. Caller agent matching
2. Situational awareness & risk management
3. Talent, training and retention
4. Process and flow improvements
5. Map path to automation
6. Etc..

Call Center Instrumentation & Analytics (CCIA)

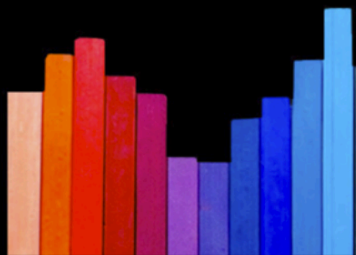


Call Center Audio

Speech to Text (STT)



Tone Analyzer



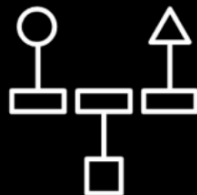
emotion language
social customer-care

Natural Language
Understanding (NLU)



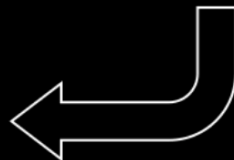
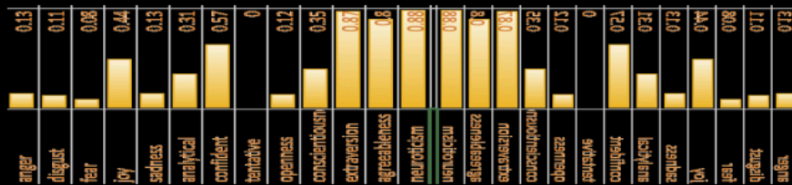
concepts entities
categories sentiment

Natural Language
Classifier (NLC)

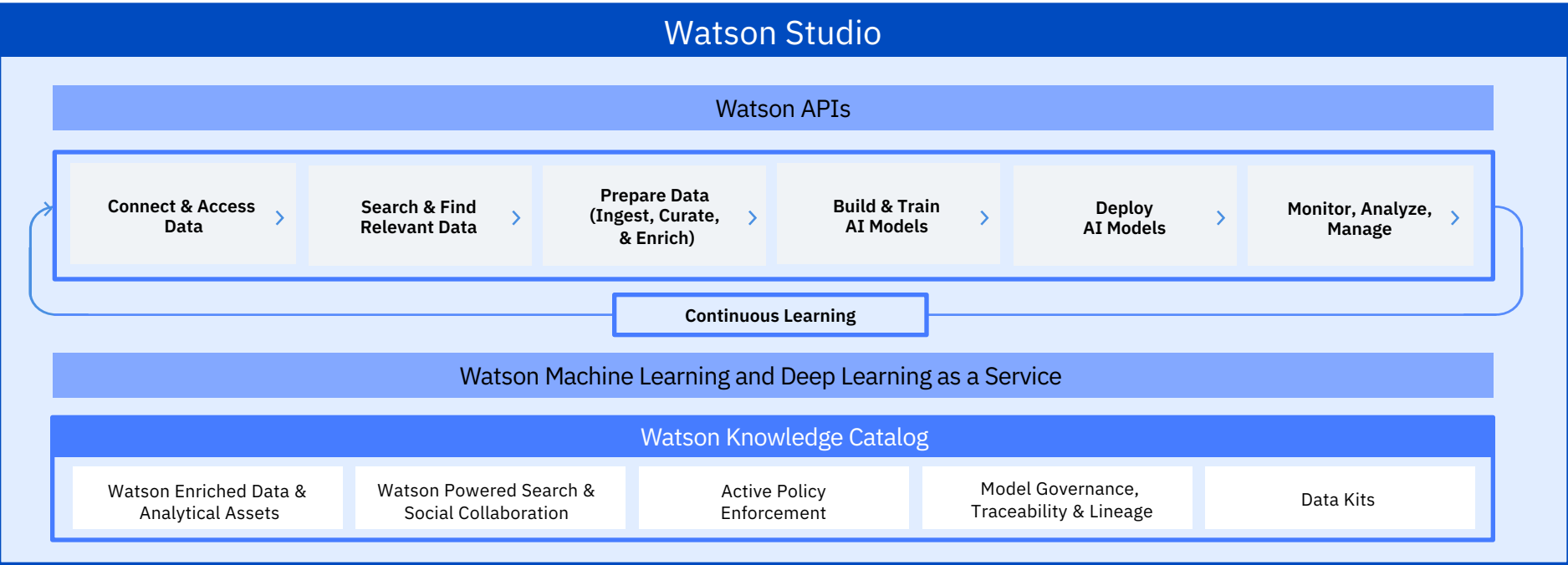
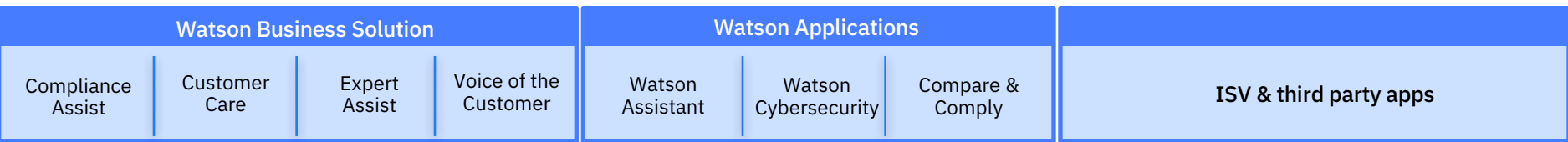


intent profanity
agent-request flags

- Time slice
- By Customer / Agent
- Node flags / heat map



Watson is AI for Smarter Business



Foundation Services



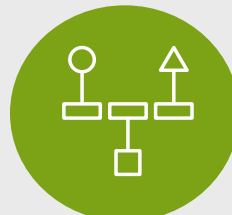
**Natural
Language
Understanding**



**Tone
Analyzer**



**Personality
Insights**



**Natural
Language
Classifier**



**Conversation &
Assistant**



**Discovery
News**



**Speech to
Text**



**Text to
Speech**



**Language
Translator**



**Visual
Recognition**

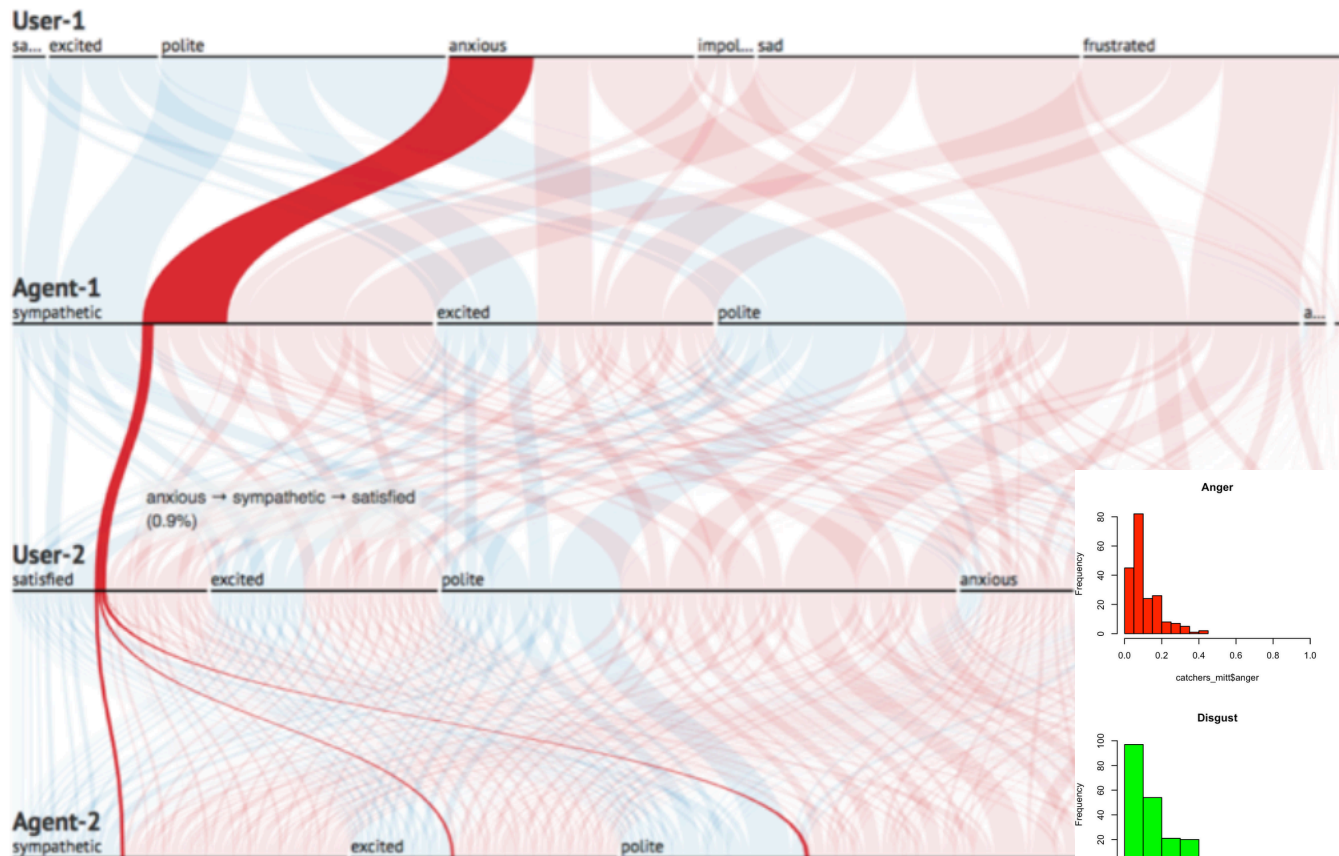


**Knowledge
Studio**



Discovery

Visual Query: selecting a tone flow path



Open Controls

Search for...



Conversations with the Selected Flow of Tones

T1 [anxious, sad, frustrated]:

Nice job by @telecommunication_company
Massive outage in Austin. When you call 24x7 tech support, you get a recording saying sorry this office is closed.

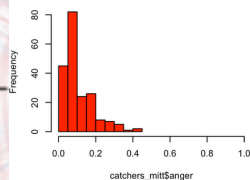
T2 [sympathetic, polite]:

@user We sincerely apologize for this experience, David! Are you still experiencing issues with your service? ^HeatherM

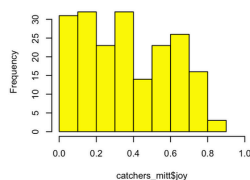
T3 [satisfied, sympathetic, polite]:

@telecommunication_company yes. Thank you. Back on this morning

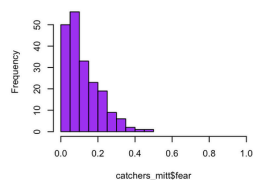
Anger



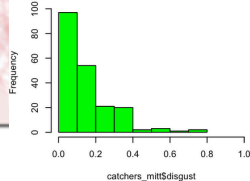
Joy



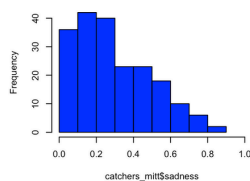
Fear



Disgust



Sadness



Out of Scope

But Important to Consider

1. STT custom models & optimization
2. Audio Separation or Diarization
3. Data Privacy Care
4. UX/UI and design
5. NOT a product! Code is for demo / education only

Lab Links

GitHub Root Repository

<https://github.com/mamoonraja/call-center-think18/>

Audio Sample Files

https://github.com/mamoonraja/call-center-think18/tree/master/resources/audio_samples

IPython Notebook / Jupyter Notebook

<https://ipython.org/notebook.html>

Console for IBM Cloud / IBM Watson

<https://www.ibm.com/cloud/>

<https://console.ng.bluemix.net/>

Thank you

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