

AI Sentiment Analysis of Audio Streams using Nexmo/ Vonage & IBM Watson

—

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Hi, I'm Dave

I'm a developer advocate for IBM in San Francisco. I also help organize:

- The SF JavaScript Meetup
- IBM Developer SF Meetup
- ForwardJS San Francisco && Ottawa

I participate in meetups, hackathons, webinars and write articles about technology for IBM and other organizations.



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Step 0: Sign Up for IBM Cloud Account

ibm.biz/nexmowebinar

What is Nexmo?

“Nexmo, the Vonage API Platform is a business unit of Vonage that develops and markets communication APIs to enable developers and businesses to rapidly innovate the way they communicate with their customers. We tear down the barriers to entry so that any developer can reach a global audience from day 1 and enable businesses to create customer experiences so they can delight their customers.”



Developers be like:



COMMUNICATION APIs

Cloud communications building blocks with global reach.



Voice

Build modern, high-quality voice applications in the cloud.



Video

Build live interactive video into your web and mobile apps.



SMS

Programmatically send and receive SMS in practically every country.



SIP Trunking

Make and receive calls from the cloud with your existing VoIP infrastructure.



Messages NEW

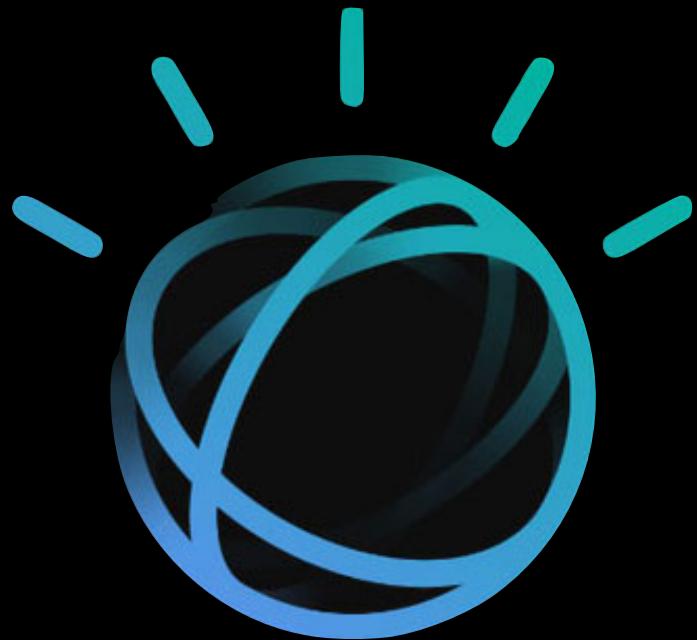
Communicate with [WhatsApp](#), [Facebook Messenger](#), [MMS](#), and [Viber](#).



Number Insight

Get real-time intelligence on any phone number in the world.

↳ IBM Watson Services Overview



1. Tone Analyzer

ibm.com/watson/services/tone-analyzer



2. Speech to Text

ibm.com/watson/services/speech-to-text

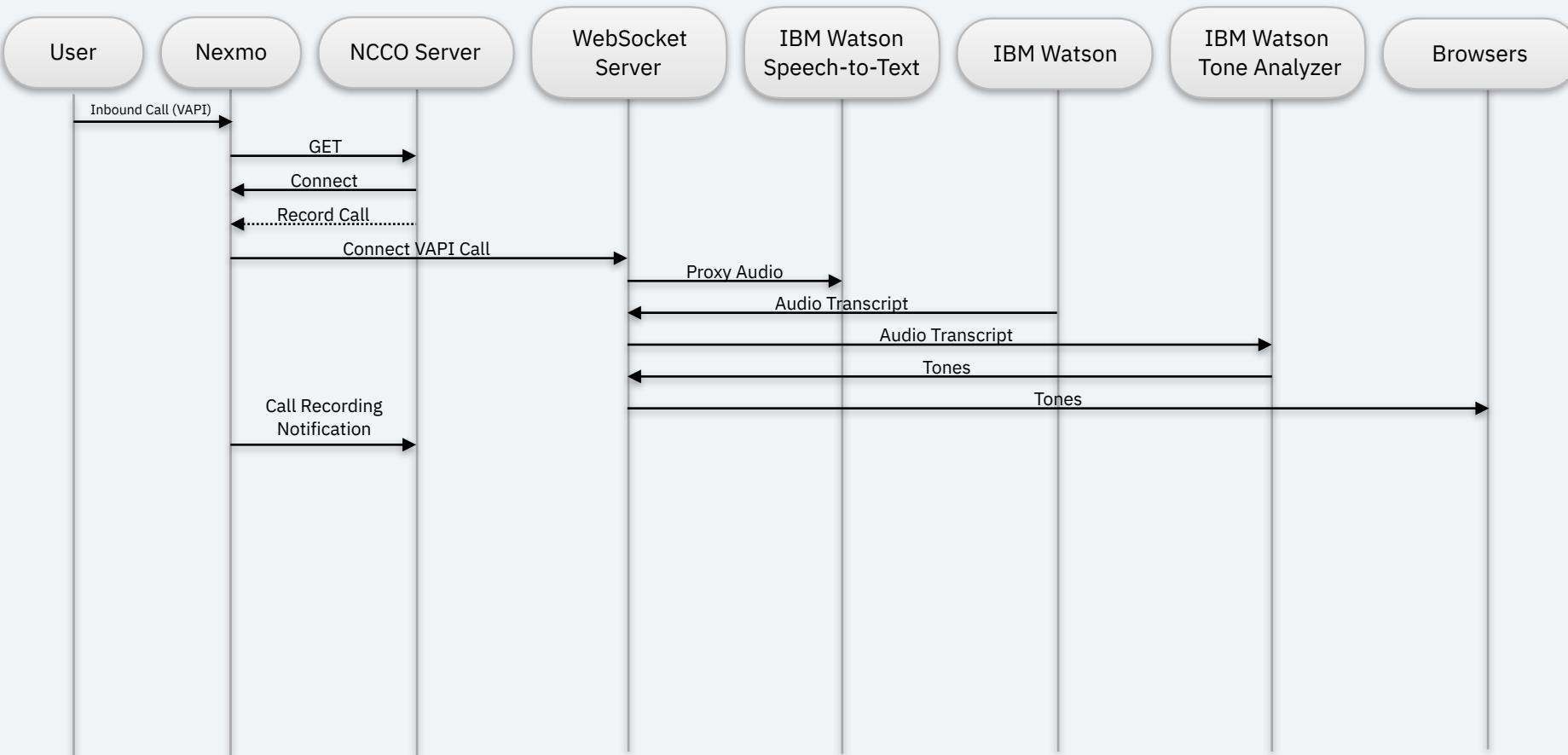
The question of what is artificial intelligence is a complex one non I would say if we define artificial intelligence is the ability of a machine on its own to understand large volumes of data to reason that data with a purpose state to predict the future and then tell you continue to learn and get better.

3. Natural Language Understanding

ibm.com/watson/services/natural-language-understanding/

Aäå

Data Flow Diagram



↳ Code Overview

↳ Clone the Code from GitHub

github.com/drnugent/nexmo-watson-tone-workshop



Code overview

- NCCO (developer.nexmo.com/voice/voice-api/ncco-reference)
 - JSON Hijacking (haacked.com/archive/2009/06/25/json-hijacking.aspx/)
 - Call Recording & Natural Language Understanding
 - ngrok (dashboard.ngrok.com)

↳ About WebSockets



About WebSockets

Events

- onopen
- onmessage
- onerror

Methods

- send()
- close()



↳ Create your ngrok Account
dashboard.ngrok.com

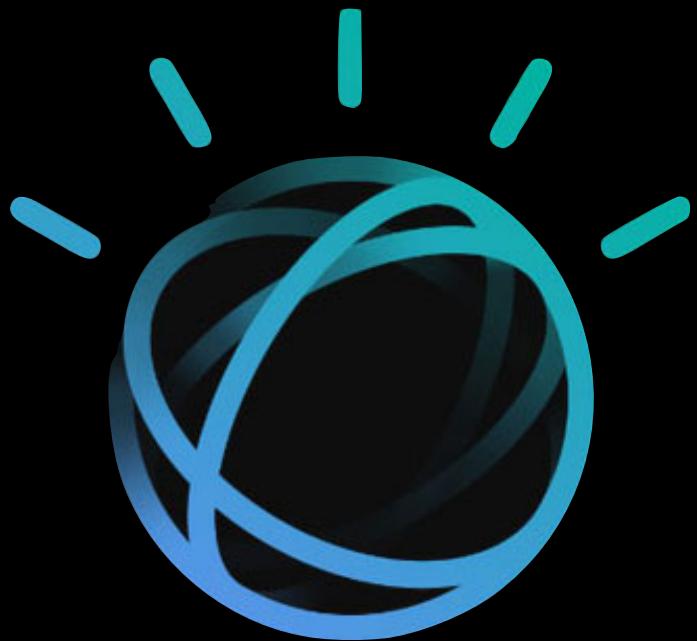
The image features a large, bold, orange sans-serif font spelling out the word "ngrok". The letters are slightly slanted to the right, creating a dynamic feel. The background is plain white, making the orange color stand out.

↳ Nexmo's ngrok Tutorial:

nexmo.com/blog/2017/07/04/local-development-nexmo-ngrok-tunnel-dr

A large, bold, orange sans-serif font logo for "ngrok". The letters are slightly slanted to the right.

↳ Create Watson Services



↳ Create your Nexmo Application & Number



↳ Set Environment Variables

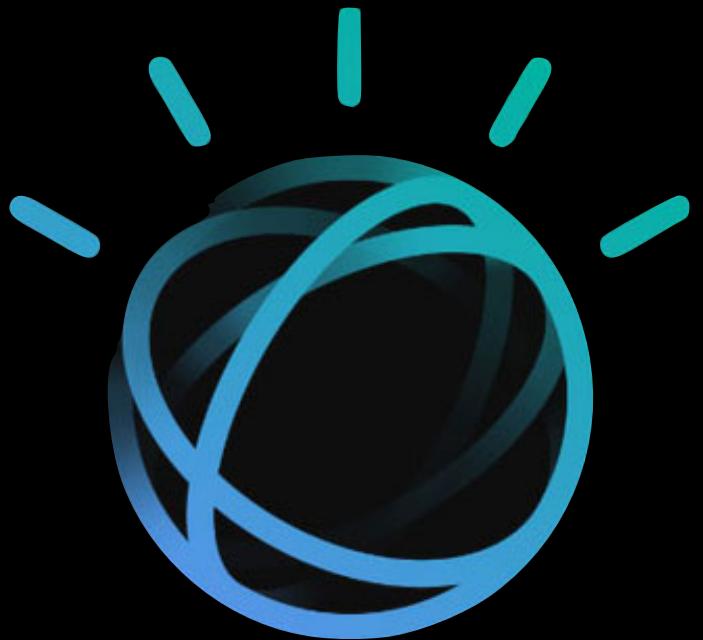


Set Environment Variables

```
export SERVER_URL=https://nexmo-watson.ngrok.io
export WS_SERVER_URL=ws://nexmo-watson.ngrok.io
export NEXMO_VIRTUAL_NUMBER=
export WATSON_TRANSCRIPTION_USERNAME=
export WATSON_TRANSCRIPTION_PASSWORD=
export WATSON_UNDERSTANDING_USERNAME=
export WATSON_UNDERSTANDING_PASSWORD=
export WATSON_TONE_ANALYZER_USERNAME=
export WATSON_TONE_ANALYZER_PASSWORD=
```



↳ Run the Project



nexmo

↳ Vonage Campus
vonage.com/campus



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	Cloud Native Development Track	Machine Learning Development Track
12:00 - 12:20	Keynote 1: Containerized Workloads on the IBM Cloud	Keynote 1: Explainable, Fair, Accurate, and Open AI in the Enterprise
12:20 - 12:40	Keynote 2: Multicloud management of applications	Keynote 2: Learn more from Less: Latest from IBM Research in AI and Deep Learning
12:40 - 12:55		Lab: IBM Cloud account setup and IKS cluster creation
01:00 - 01:40	Breakout 1: Microservices in practice	Breakout 1: AI behind the US Open, Wimbledon, Masters, and ESPN Fantasy Football
01:40 - 02:20	Breakout 2: Kabanero: open source tools to accelerate container-based application development and deployment	Breakout 2: Deploy State of the Art Deep Learning Models in under an Hour
02:20 - 03:00	Breakout 3: DevSecOps: putting security in DevOps	Breakout 3: Tools for Machine Learning w/Kubernetes using Open Source
03:00 - 04:00	Lab: Hands-on with Kubernetes	Lab: Evaluating Models for Bias
Badges	App Modernization Basics	IBM Machine Learning

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Questions?

And maybe, if we are lucky
and the stars align:
answers!

