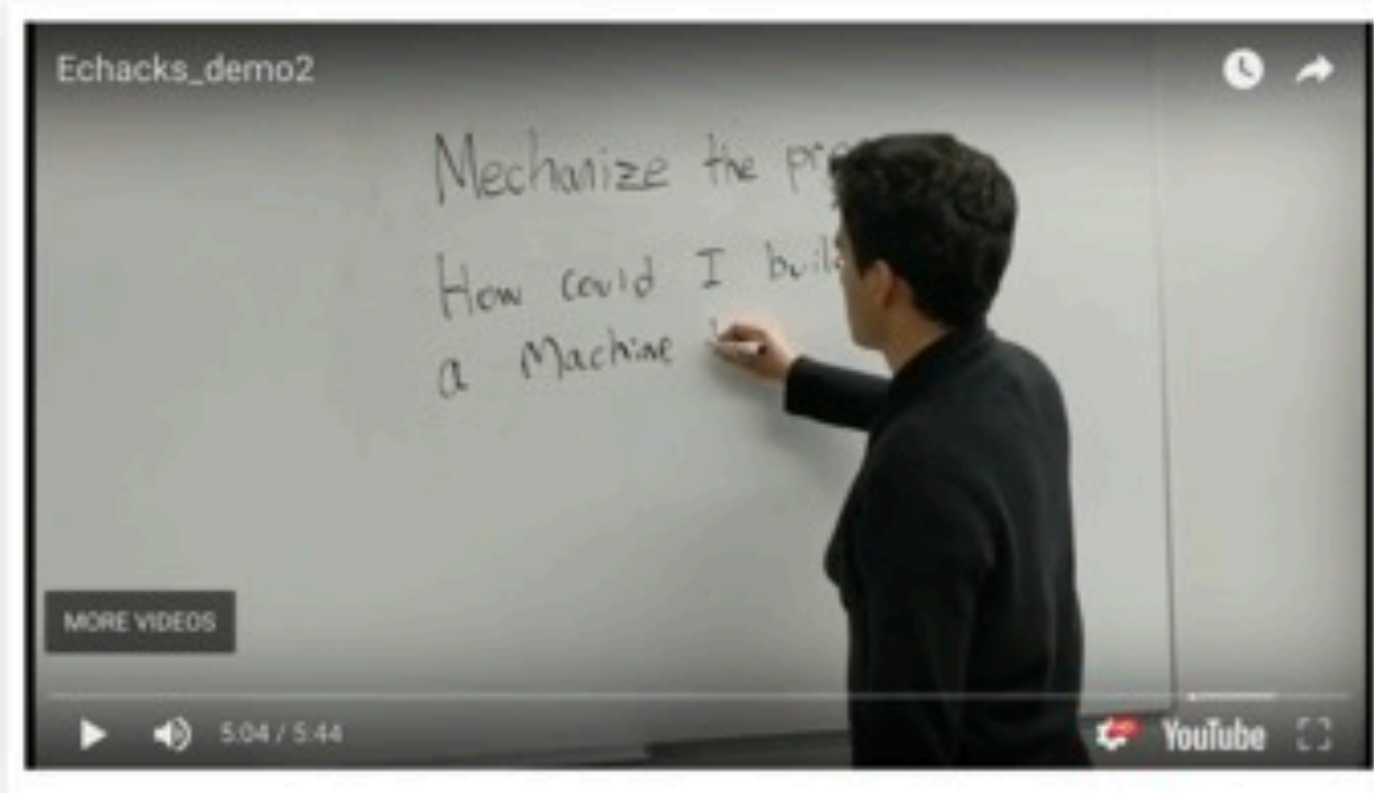


Using AI in Your Startup, Tomorrow.

Alex Gordienko, Sid Gupta, Adam Comer - Knowtworthy



It all started at a Hackathon



The Naturalistic Imperative
In Cognitive)
Explain the root
of a

Analyze the Cognitive Pro
Formalise In a
non - homuncut

Mechanize the process
How could I build
a Machine to do it ?

.01

Enter in Link to Lecture

.02

Transcribe Whiteboard

.03

Generate Slides and
Context

“I could see this being used
in my lectures”

Context

Not logged in | Talk | Contributions | Create account | Log in

Article | **Talk** | Read | View source | View history | Search Wikipedia

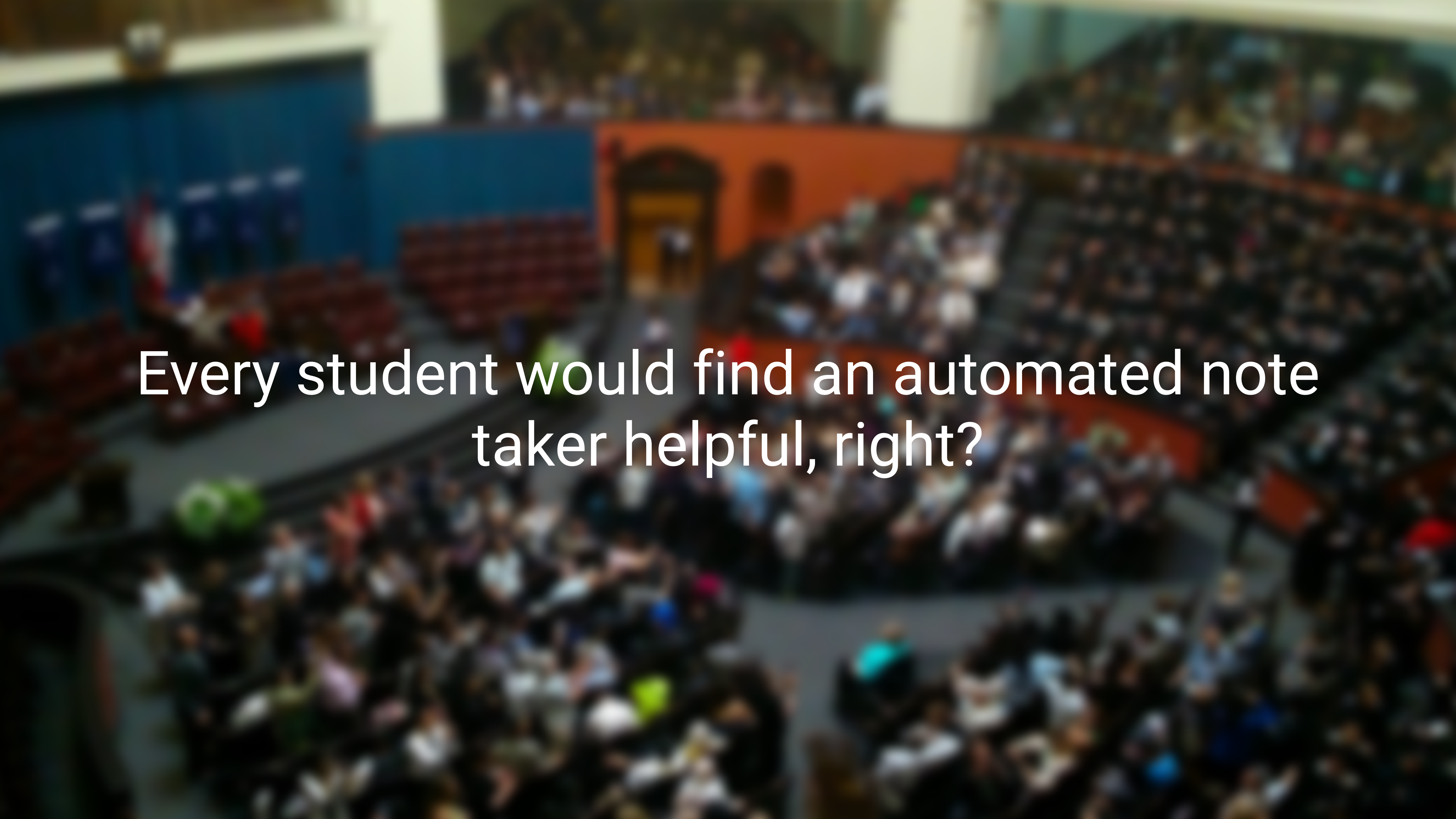
Machine

From Wikipedia, the free encyclopedia

This article is about devices designed to perform tasks. For other uses, see [Machine \(disambiguation\)](#).

A **machine** uses **power** to apply forces and control movement to perform an intended action. Machines can be driven by animals and people, by natural forces such as wind and water, and by chemical, **thermal**, or electrical power, and include a system of **mechanisms** that shape the actuator input to

“I could see this being used
in my lectures”

A high-angle, blurred photograph of a large crowd of people, likely at a stadium or arena. The crowd is dense and fills most of the frame. In the background, there are some architectural elements, including a prominent orange wall with a doorway and a blue wall to the left. The overall scene is out of focus, emphasizing the sheer number of people.

Every student would find an automated note taker helpful, right?

Turning a Hackathon Idea Into a Startup

- Come up with idea
- Build it!
- Profit.

Build it!

Build it?

Build it?

1. Build speech to text engine.
2. Build computer vision handwriting to text engine for text and diagrams on chalkboards
3. Combine the two into a 4.0 GPA generating web platform

Opportunity to work on this all summer



The ENTREPRENEURSHIP
Hatchery

A startup is a hypothesis.

You *think* that your product is going to help people, but have no evidence to back that up.



Validate first, build later

1. Go find your target demographic and ask them all about their pain surrounding a problem
2. Research why this problem exists and existing solutions
3. Pitch your ideas to others and ask their thoughts



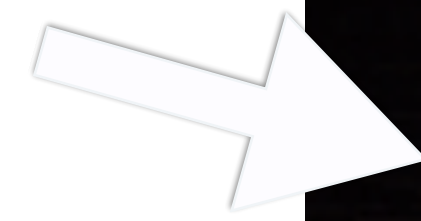
Meetings!

Back to Square One

1. Meetings make more sense for notes automation
2. Meeting inefficiency is a \$280 Billion issue!
3. Set up a focus group with business professionals to confirm
4. Can we finally start building now?

Not yet..

The Focus
Group



The focus group did not like the idea of recorded meetings

The focus group did not like the idea of recorded meetings

1. We asked about their habits to determine the core cause of meeting ineffectiveness
2. Determined that team communication and collaboration are the real culprits
3. Decided to include sentiment analysis

Build it!

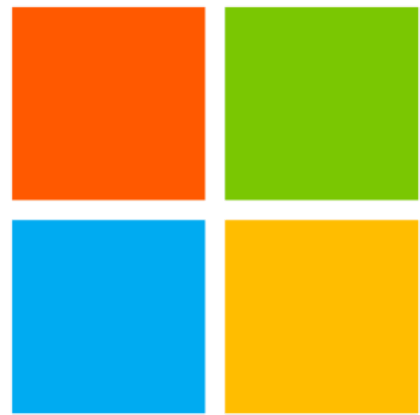
What We'd Need

- Sentiment Analysis
- Speech to Text

But the more we researched building our own solutions,
the more we realized that we might not have to..

Using AI Services For Your Ideas

The Power of AI APIs



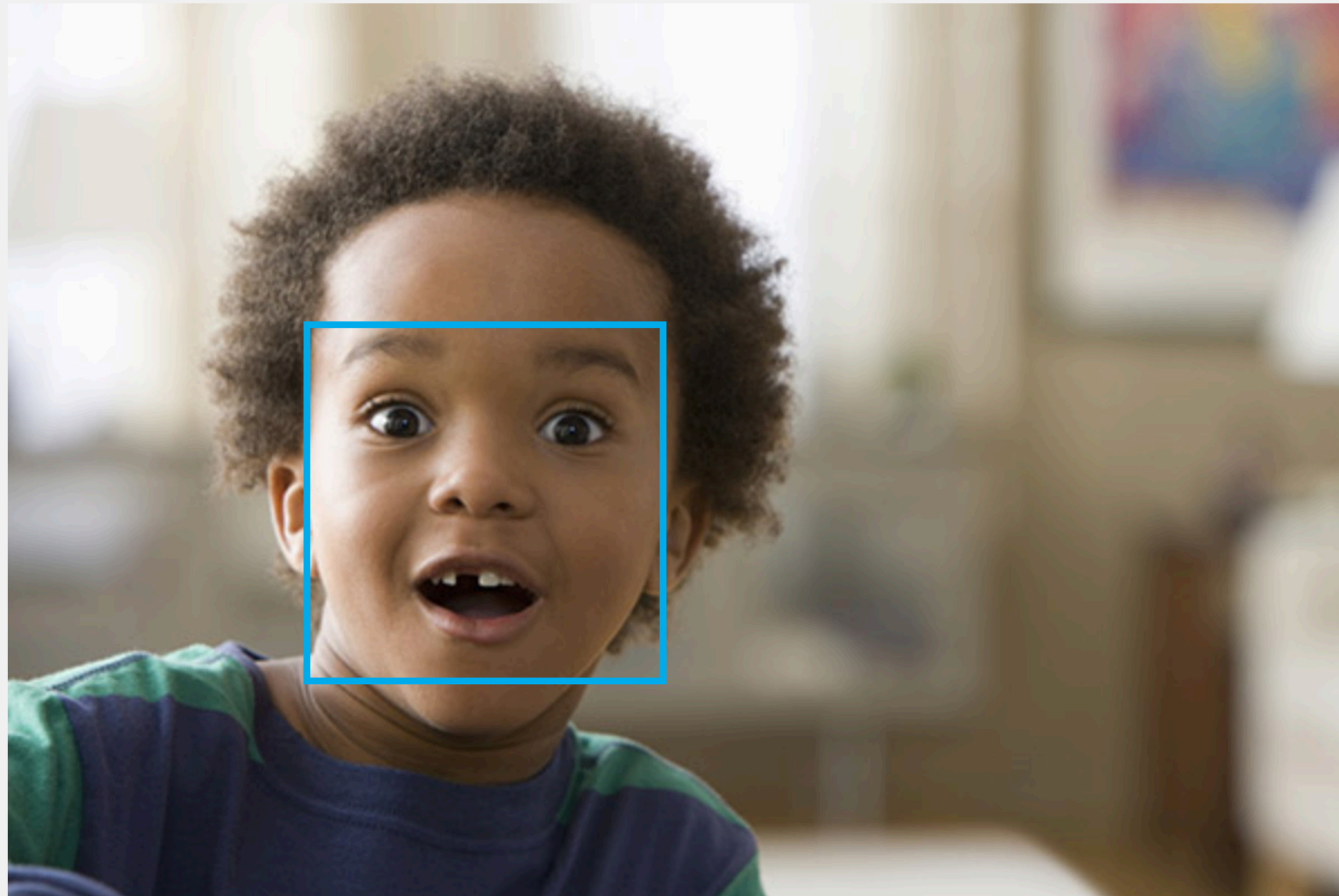
General Models

- Handwriting Recognition
- Speech to Text

Specific Models

- Emotion Detection in Photos

Emotion Detection in Photos



Detection result:
1 faces detected

JSON:

```
[  
  {  
    "faceRectangle": {  
      "top": 141,  
      "left": 130,  
      "width": 162,  
      "height": 162  
    },  
    "scores": {  
      "anger": 9.29041E-06,  
      "contempt": 0.000118981574,  
      "disgust": 3.15619363E-05,  
      "fear": 0.000589638,  
      "happiness": 0.06630674,  
      "neutral": 0.00555004273,  
      "sadness": 7.44669524E-06,  
      "surprise": 0.9273863  
    }  
  }  
]
```

Anger: 0.000000929

Surprise: 0.927

Getting Set Up

Pass in
Subscription Key

```
<!DOCTYPE html>
<html>
<head>
  <title>Detect Faces Sample</title>
  <script src="http://ajax.googleapis.com/ajax/libs/jquery/1.9.0/jquery.min.js"></script>
</head>
<body>

<script type="text/javascript">
  function processImage() {
    // Replace <Subscription Key> with your valid subscription key.
    var subscriptionKey = "<Subscription Key>";

    // NOTE: You must use the same region in your REST call as you used to
    // obtain your subscription keys. For example, if you obtained your
    // subscription keys from westus, replace "westcentralus" in the URL
    // below with "westus".
    //
    // Free trial subscription keys are generated in the westcentralus region.
    // If you use a free trial subscription key, you shouldn't need to change
    // this region.
    var uriBase =
      "https://westcentralus.api.cognitive.microsoft.com/face/v1.0/detect";

    // Request parameters.
    var params = {
      "returnFaceId": "true",
      "returnFaceAttributes": "all"
    };
  }
</script>
</body>
</html>
```

Getting Set Up

Modify own code to work with the API

```
<input type="text" name="inputImage" id="inputImage" value="https://upload.wikimedia.org/wikipedia/commons/c/c3/RH_Louise_Lillian_Gish.jpg" />
```

Input image URL

```
<button onclick="processImage()"> Analyze face</button>
```

Create a button, which runs processImage() function on click

```
<br><br>
```

```
<div id="wrapper" style="width:1020px; display:table;">  
  <div id="jsonOutput" style="width:600px; display:table-cell;">  
    Response:<br><br>
```

```
  <textarea id="responseTextArea" class="UIInput" style="width:580px; height:400px;" />
```

Display results from processImage()

```
</div>
```

```
<div id="imageDiv" style="width:420px; display:table-cell;">  
  Source image:
```

```
<br><br>
```

```
<img id="sourceImage" width="400" />
```

Display image from URL

```
</div>
```

```
</div>
```


Getting Set Up

Hack the North Project
using Microsoft
Emotion API

The screenshot shows a web browser window with the Orion Data application running on localhost:3000. The application has a search bar at the top. Below it is a video player showing a video titled "Hack the North 2017" with a play button overlay. Under the video player, the text "Hack the North 2017" and "Emotional Analysis" is visible. To the right of the video player is a sidebar with the heading "Suggestions from Emotion". It contains three video suggestions: "Hack the North 2017...", "Open Pokemon - Hack the N...", and "Hack the North Closing Ce...". A blue button labeled "BEGIN SENTIMENT" is positioned at the bottom right of the suggestions list. The browser's address bar shows "localhost:3000" and the page title is "Orion Data".

Sentiment Analysis



Audio Transcription



Sid Gupta

Lorem ipsum dolor sit amet,

Adam Comer

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed aliquet vitae lectus id sagittis. Pellentesque sagittis ligula non ante mattis, vel lacinia orci placerat. Cras vitae

Alex Gordienko

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Sid Gupta

Lorem ipsum dolor sit amet,

Adam Comer

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Highest Clout



Sid Gupta

Most Analytic



Adam Comer

Most Words Spoken



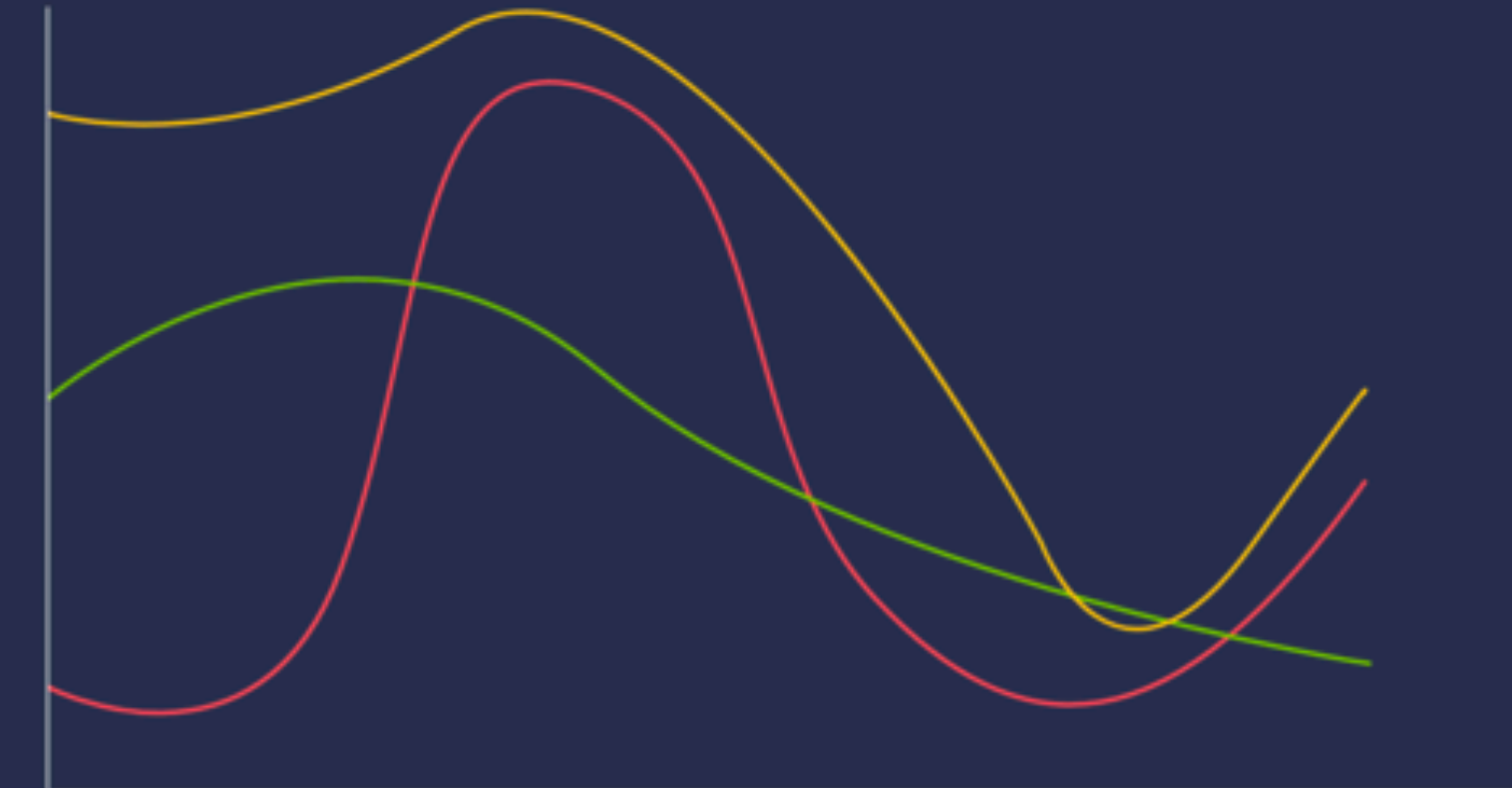
Alex Gordienko

Highest Positivity



Sid Gupta

Aggression Levels



Topic Similarity



The Good and Bad of using APIs

THE GOOD

- Fast Prototyping
 - Easy to build, easy to delete
 - Building what the client wants to use
- Iteration and Learning
- Data Collection



THE BAD

- Can get expensive if you are bootstrapping
- Not optimized for your needs
- Not as secure
- Not as cool

Great Places to Grow Your Idea

INCUBATORS AND ACCELERATORS AT U OF T



The ENTREPRENEURSHIP
Hatchery



And more..

Thank you!

More resources!

(take a photo maybe)

1. Slides and demos will be posted on our website: knowtworthy.com/startai
2. Microsoft Emotion API: <https://azure.microsoft.com/en-us/services/cognitive-services/emotion/>
3. Starting Up at U of T: <http://entrepreneurs.utoronto.ca/>