The Practical Evolution of the Auto-Tagging Technology as a Service

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In numbers

more than

200 Businesses

more than

9.9K Developers

in more than

82 Countries Worldwide
Image Recognition as Service

1. Submit an image
2. Get a list of tags or categories
3. Do whatever you need with them
DIY (Do It Yourself)

- Collect data
- Train and optimize
- Deploy and handle scale
- Support and maintain
- Keep innovating

Frameworks

- TensorFlow
- Caffe
- Caffe2
- Theano
- Torch
- MXNet
Utilize a service

- Zero time to market
- No backend operations needed
- Pay as you go pricing

Services
Traditional Processing

- Amazon MT
- TagCow
- Imagga
- Imense
- CamFind (Cloudsight)
Deep Learning Based

- Imagga
- Clarifai
- Rekognition (Orbeus)
- Cloudsight
- Metamind
- MS Cognitive Services
- IBM Watson
- Google Cloud Vision
- Amazon Rekognition (acquired Orbeus)
- Salesforce Einstein (acquired Metamind)
Practical Features

- Detect faces
- Extract text
- Extract colors
- Analyze composition
- Classify/categorize scenes
- Recognize the main object
- Suggest multiple keywords
- Generate textual descriptions
- Recognize quality and art value
- Localize multiple objects
2. Embrace nothing as an Article of Faith, or part of Religion, but what the Holy Scriptures are express, or very clear concerning. You have in these Scriptures all that is necessary to any Man’s Salvation. 2 Tim. 3. 16. 17. Job. 20. 13. Believe no Man, nor no Society of Men in these Cases, farther the Scriptures do warrant what they teach. Acts. 17. 8. 20.
Classify/Categorize Scenes

- **Beaches & Seaside**
- **Nature & Landscape**
- **Sunrises & Sunsets**
- **Events & Parties**
Recognize The Main Object

100% parrot
Localize Multiple Objects

Image source: https://www.linkedin.com/pulse/object-detection-using-deep-learning-advanced-users-part-1-sinhal
Generate Textual Descriptions

- "man in black shirt is playing guitar."
- "construction worker in orange safety vest is working on road."
- "two young girls are playing with lego toy."
- "boy is doing backflip on wakeboard."
- "girl in pink dress is jumping in air."
- "black and white dog jumps over bar."
- "young girl in pink shirt is swinging on swing."
- "man in blue wetsuit is surfing on wave."
Recognize Quality and Art Value

Aesthetics **really good**

78%

Suggested tags
- silhouette
- basketball - sport
- sunset
- basketball hoop
- sport
- basketball player
- leisure activity
- court
- outdoors
- taking a shot - sport
- men
- sky
- real people
- people
- adult
- day
- adults only

Suggested caption
silhouette of basketball hoop against sky during sunset
Practical Use-cases

- Internal organization of photos
- Organization of photos for sale
- Organization of personal photos
- Content moderation
- Marketing and advertising
- Analytics and profiling
- Content recommendation
### Use-cases

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Use-case: Automated Keywording

Providing powerful image search capabilities.

Reduces/replace manual tagging and enhances search.

Technologies used:

Tagging API
Use-case: Automated Keywording

CLASH OF TAGS

32.5 % Robot vs Human 51.1%

powered by Algôlia & Imaga
Use-case: Swisscom

Enhancing Swisscom myCloud with automated image organization.

Technologies used:

- Tagging API
- Categorization API
Use-case: Smart Devices

Seoul National University
Experimental Device Lab

Identify purity of waste sorting

Technologies used:

Categorization API
Use-case: Customer Profiling

KIA K5 (Optima)
Creative Campaign

Very precise personalized targeting.

Technologies used:

- Tagging API
- Color Extraction API
Challenges

- Definition of the scope
- Training Data
- Even more data
- True learning from data
- Learning from private data
On-premise Solution

- World first
- Ultimate Privacy
- Enterprise class
- Easy deployment
- Custom categorization option
- Prepaid or pay-as-you go volume-based license
- Standard and advanced support per machine
Thank You!

api@imagga.com  twitter.com/imagga  facebook.com/imagga
Use-case: Tavisca

Building a **custom hotel classifier**.

Automates classification and improving browsing experience

**Technologies used:**

- Tagging API
- Custom Training
Upcoming Imagga features

- Out-of-the-box on-premise packaging
- Official face recognition support
- Official video support
- Logo and landmark recognition
- Better multi-language support
- Positional object detection
**Giants:**
- Google Cloud Vision
- AWS Rekognition
- Microsoft Cognitive API
- IBM Watson Vision
- Salesforce Einstein

**Imagga:**
- On-premise option
- Professional custom training

**Notable Startups:**
- Clarifai
- EyeEm (Vision)
- CloudSight
Keyword and Color Tagging

- Parrot: 100%
- Bird: 100%
- Tropical: 10%
- Macaw: 100%
- Beak: 13%
- Wildlife: 10%
- Light blue: 100%
- Blue: 100%
- Black: 100%
- Navy blue: 100%
- Orange: 10%
Beaches & Seaside
Sunrises & Sunsets
Nature & Landscape
Events & Parties
NSFW (Not Safe For Work)

- Safe
- Underwear
- Not safe
Automated Analysis of raster/pixel data

Neural Networks
- deep learning
- feature extraction
- semantic expansion

Image Tagging
- 3,000+ objects
- 20,000+ terms/concepts
Traditional Image Processing and/or crowd-sourced & Deep Learning Based
Is 95% of cloud storage photos and videos? **YES!**

Does Google, Apple and Amazon have image recognition? **YES!**

Do you have it? **NO!**

Do you want to leave them ahead or you want to have it right now? **NOW!**

What do you get? **Increased cloud retention and lock in!**

Does it really work? **YES!**

How do we know? **Swisscom and 200+ more happy paying customers!**
Popular Frameworks

- CudaConvnet
- Caffe
- Torch
- Theano
- MS Cognitive Toolkit
- TensorFlow
- Caffe2