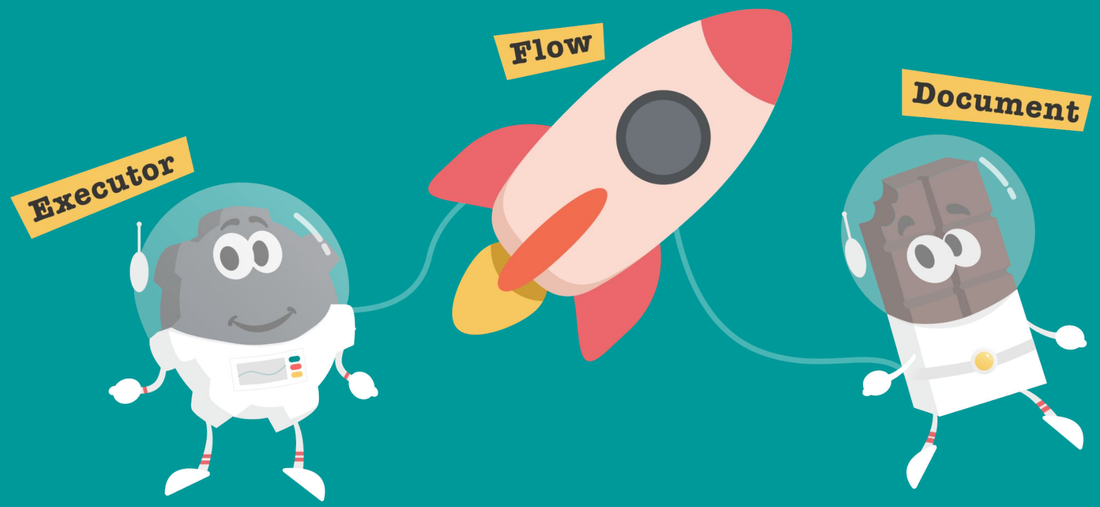


JINA + EUROPYTHON WORKSHOP

26 July 2021

Cristian Mitroi, Maximilian Werk

Jina AI

github.com/jina-ai/workshops/tree/main**/pokedex**

Please interrupt us and ask questions

Who’s that Pokemon?

WORKSHOP CONTENTS

01 **Neural Search**

A short introduction

02 **Jina AI**

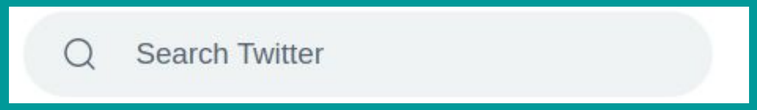
Who are we?

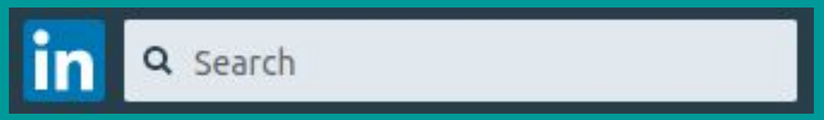
03 **Workshop**

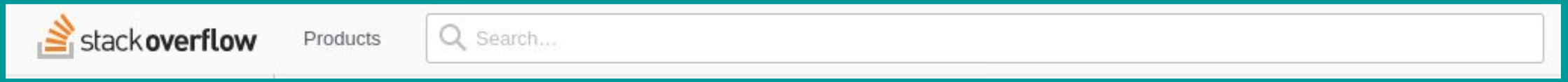
What can **Jina** do?

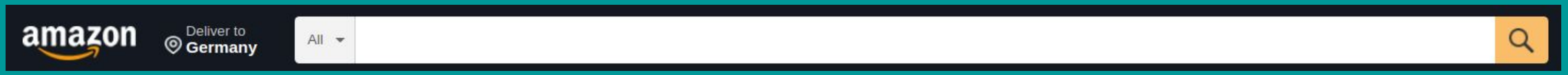
04 **Further reading**

SEARCH?


Search Twitter


Search


stackoverflow
Products
Search...

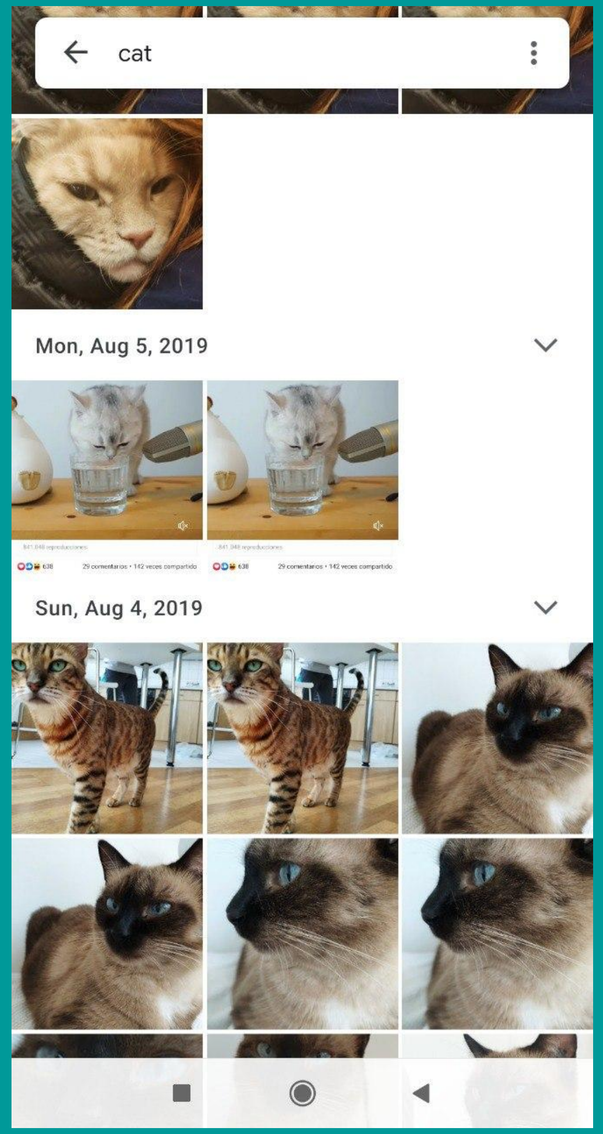

amazon
Deliver to
Germany
All

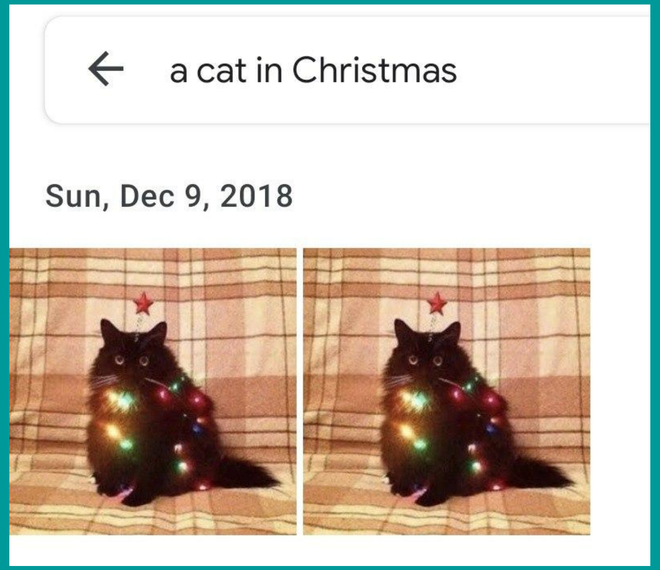

Women
Men
Kids
zalando
Clothing
Shoes
Sports
Accessories
Designer
Brands
Sale
Search

Cross-modal

In: Text

Out: Images

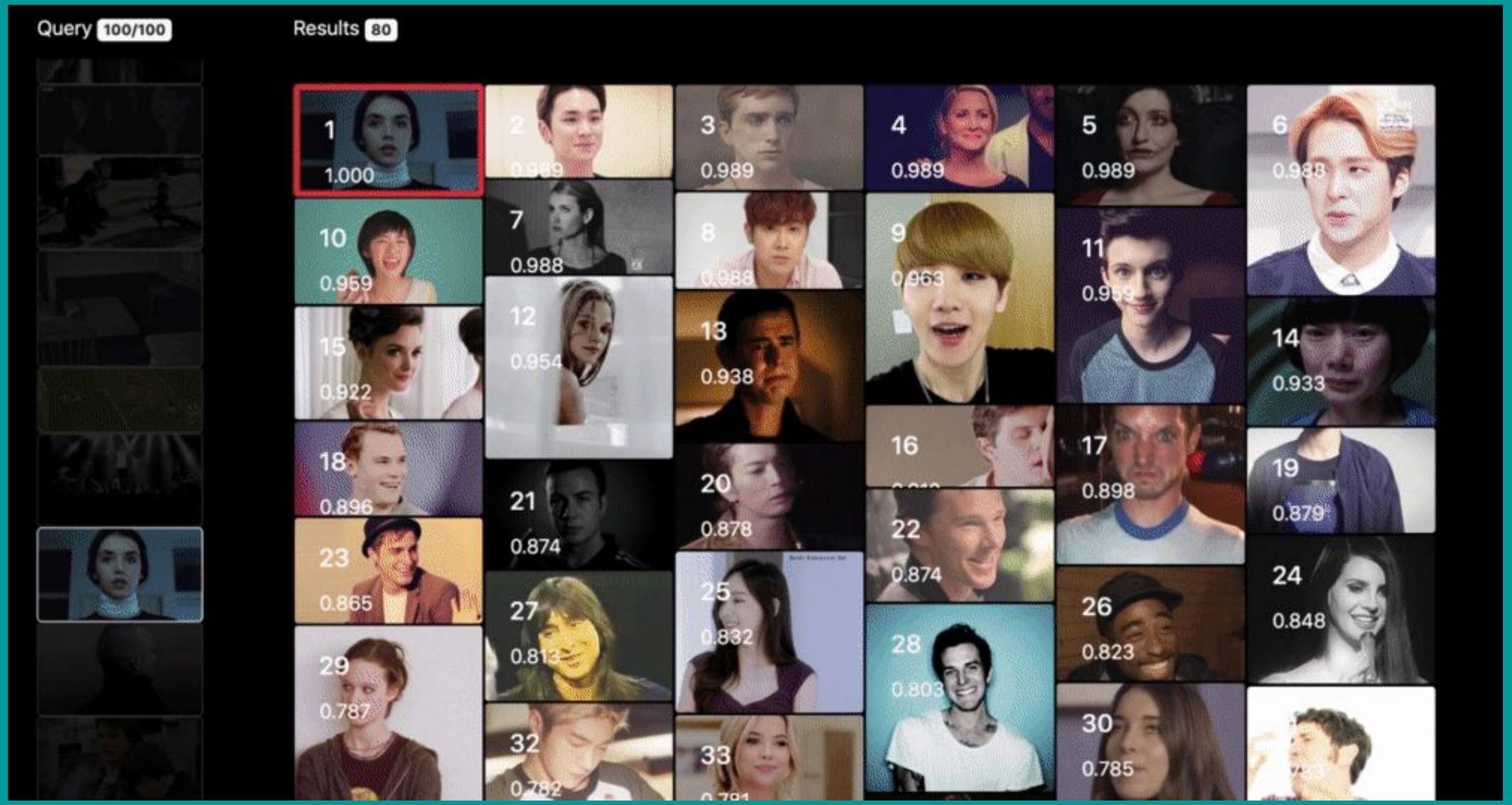


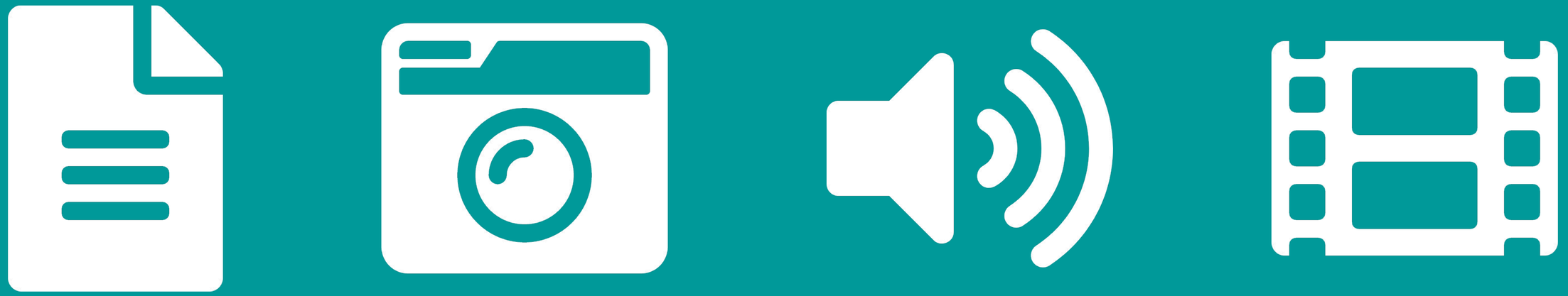


Multi-modal

Figure 3. Retrieval examples on Fashion200k dataset.

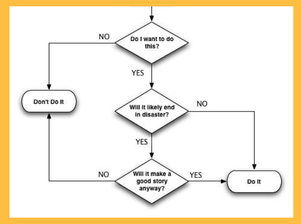
GIF Search


Query 100/100
Results 80
1
1.000
2
0.989
3
0.989
4
0.989
5
0.989
6
0.988
10
0.959
7
0.988
8
0.988
9
0.963
11
0.959
15
0.922
12
0.954
13
0.938
14
0.933
18
0.896
21
0.874
20
0.878
16
17
0.898
19
0.879
23
0.865
27
0.813
25
0.832
22
0.874
24
0.848
29
0.787
32
0.782
33
28
0.803
26
0.823
30
0.785



What is Neural Search?

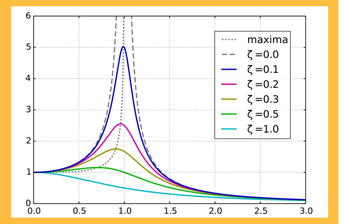
Traditional Search vs Neural Search



Rules

Catalog based search

1950-1990s



Statistics

Symbolic based search

1990-2010s

Neural Networks

Neural search

Latest

Neural Search

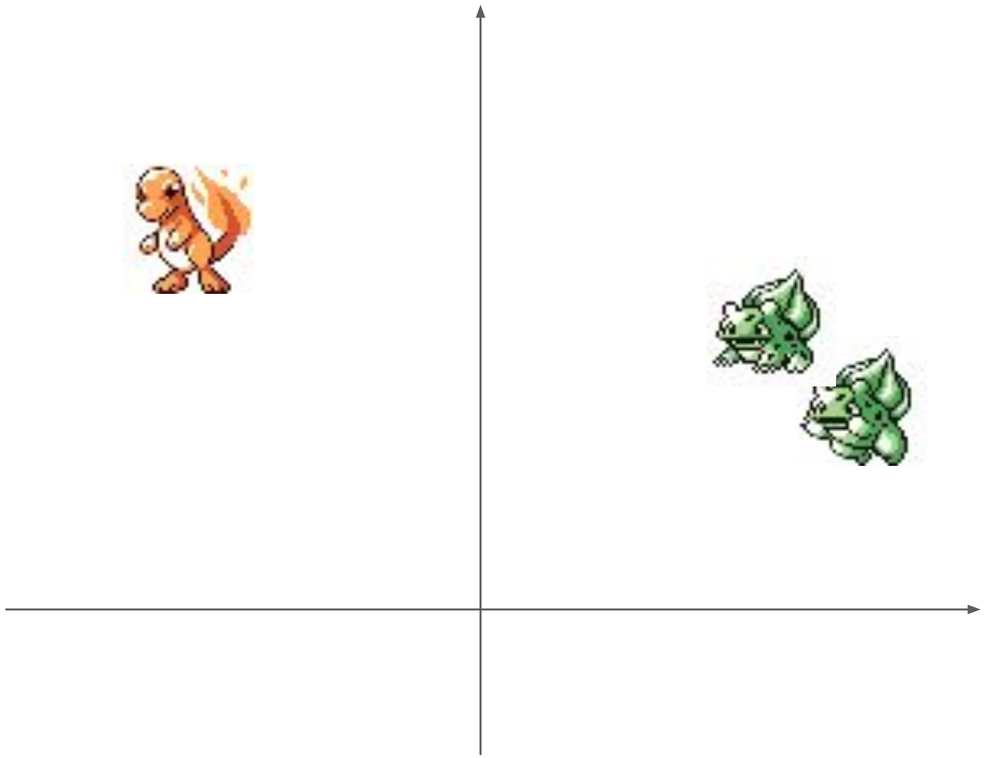
Forget about keyword search

- Basic idea: use **embeddings** from **Deep Learning models** for **similarity search** (cosine, euclidean)

 => [0.6, 0.4]

 => [0.5, 0.5]

 => [-0.5, 0.6]



Neural Search

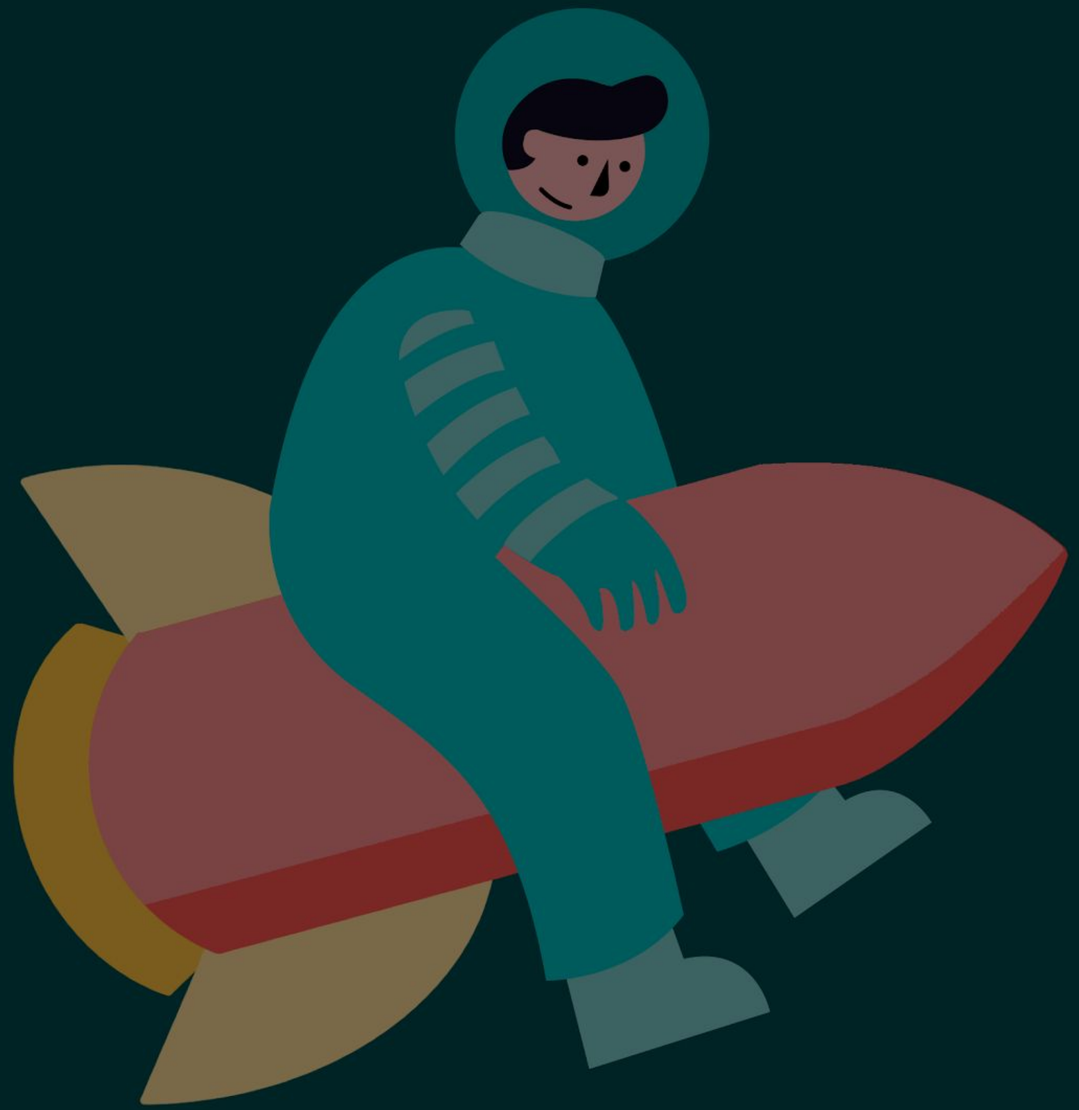
- Basic idea: use **embeddings** from **Deep Learning models** for **similarity search** (cosine, euclidean)
- Advantages
  - It's ***semantic!***
  - Data type-agnostic
  - Wide array of models
- Challenges
  - Infrastructure
  - Optimization

Jina solves this

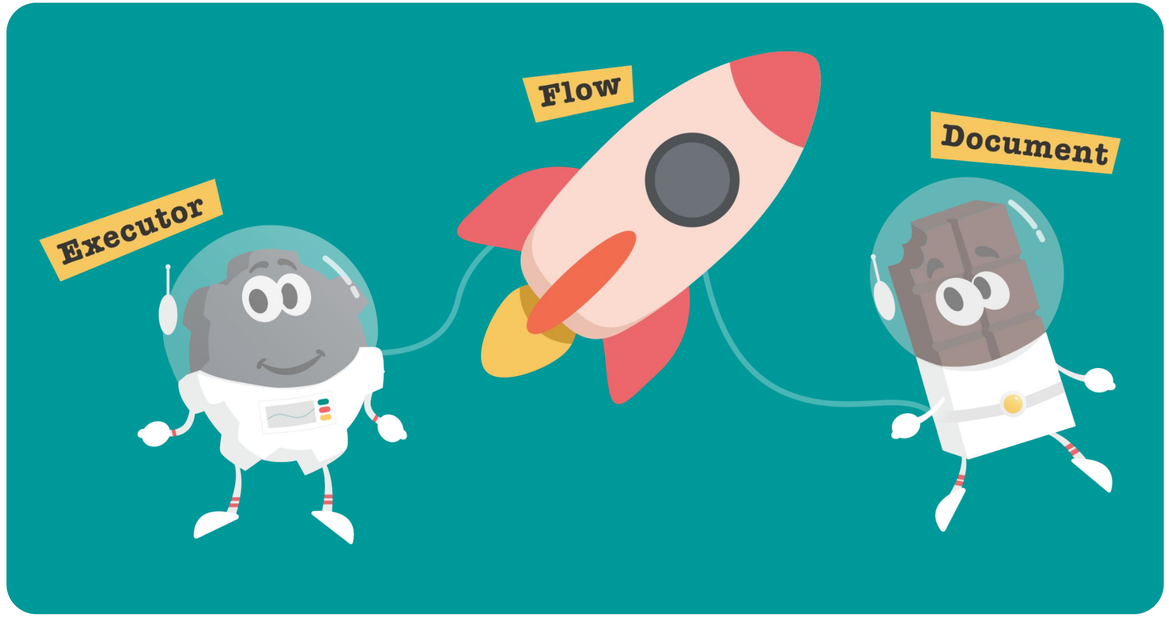
Our mission

Is to provide an **open-source neural search** ecosystem, allowing everyone to search for information in **all kinds of data** with high availability and scalability.

https://get.jina.ai

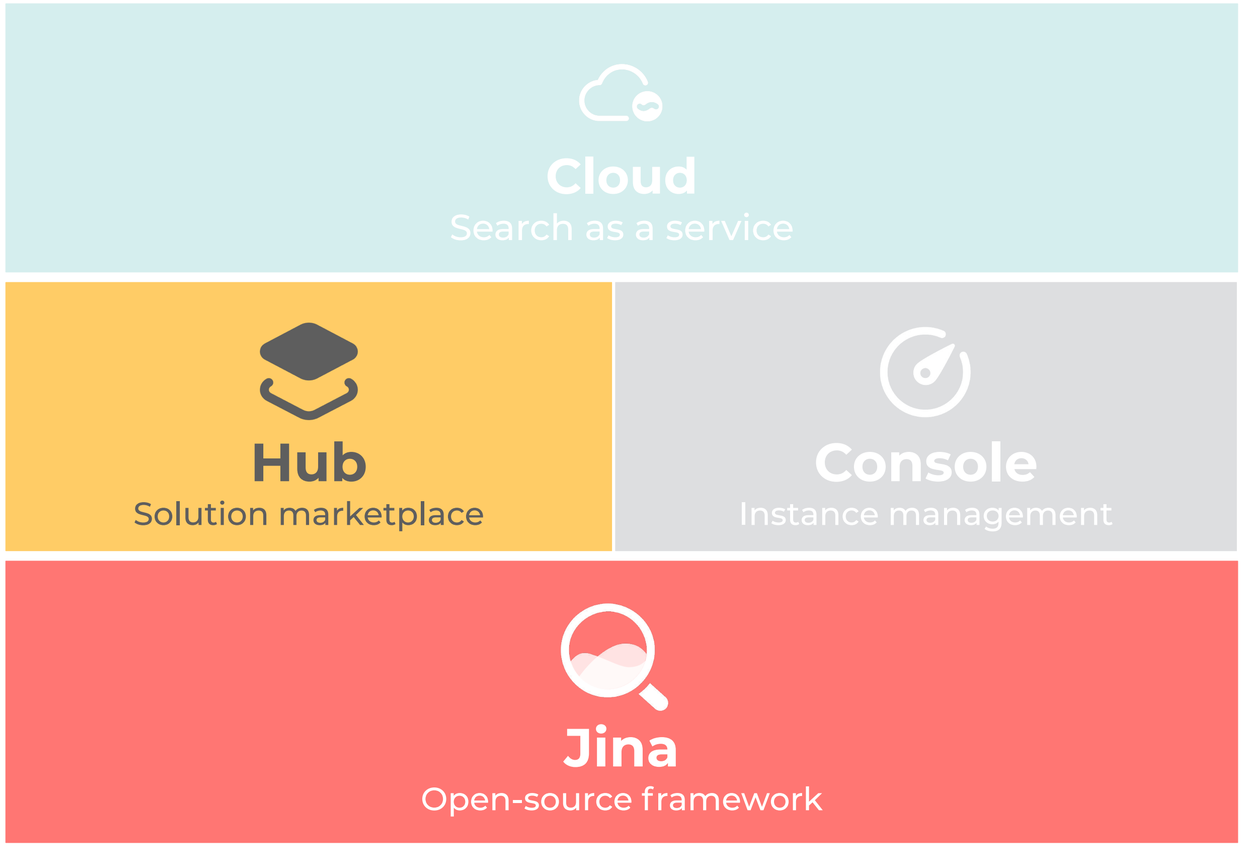


Plug & play



Product Overview

Jina AI Product Landscape



Questions?

Workshop Overview

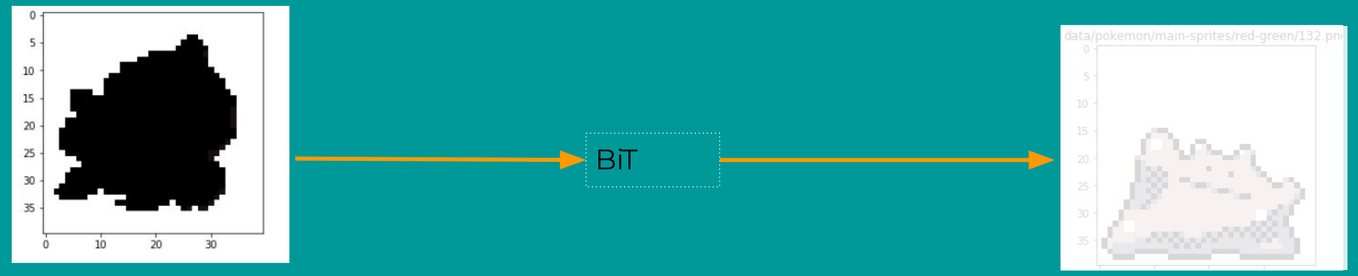
- **What you'll learn**
  - How to build a neural search engine for Pokemon images
  - Jina basics
- **Overview**
  - Set up working environment (done)
  - Minimal working image search example
  - Advanced steps: adaption of other executors and further optimization
- **Repo**: https://github.com/jina-ai/workshops/tree/main/pokedex

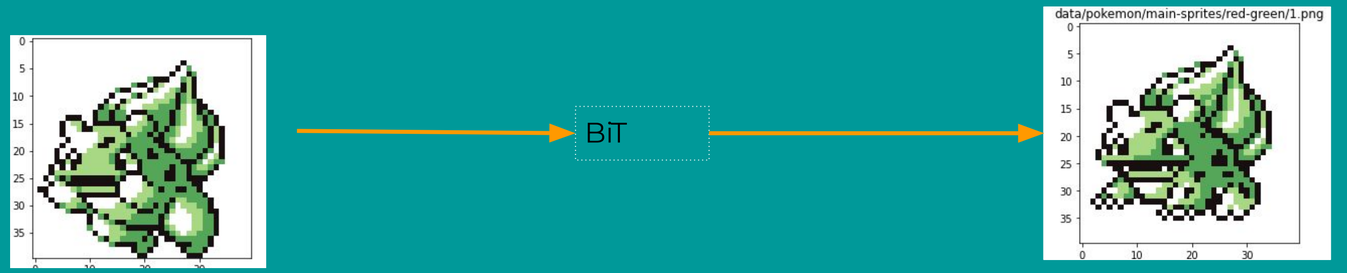
Let’s 🦘 in!

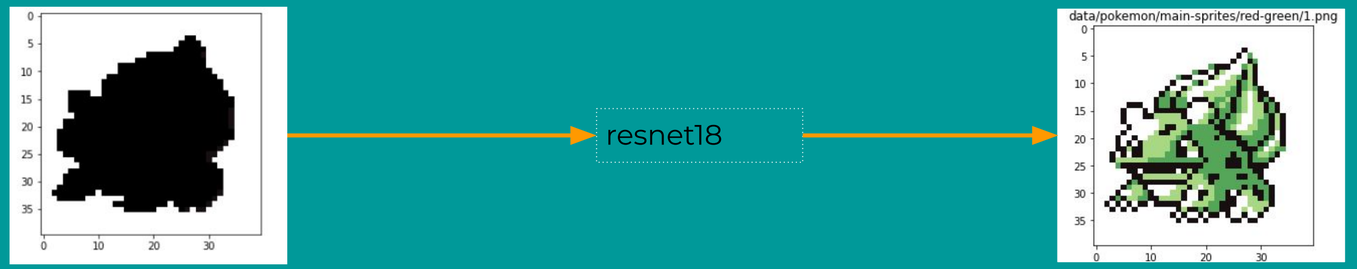
(Cristian)

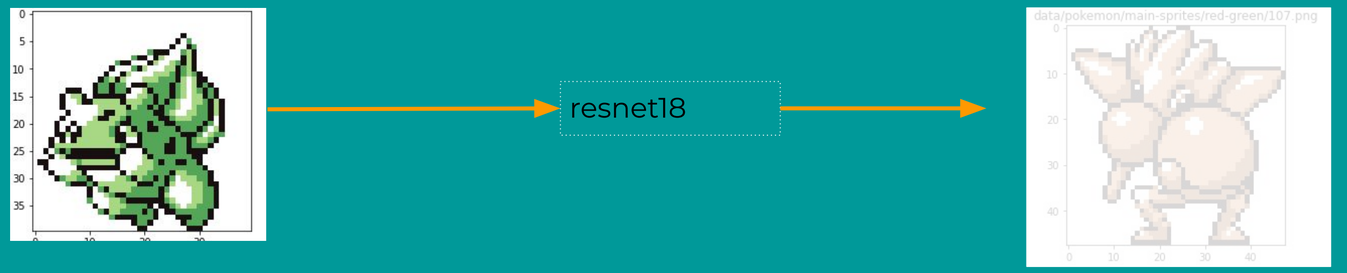
Wrap-up: Questions?

(Cristian)









About Jina

- We provide the **design pattern**, you bring the data and the model
- Caveat: Jina is only as good **as your model**!
- We do host a selection of Executors(models, data transformers, storage interfaces etc.). Go to github.com/jina-ai/executors

The Design Pattern for Search

What can Jina do?

- Different modalities (text, image, video, gifs)
- Cross-modal search (ex. searching for images with text)
- Multi-modal search (ex. searching for an image with a text+image)
- Granularity (ex. paragraphs of a text)
- Plug & play environment
- Optimization
- Fast research -> production conversion
  - Easily replace with the latest models
- Replicas, parallelization

Questions?

Further reading

Resources & links

Further links

- Download slides and code: here
- GitHub page: https://github.com/jina-ai/jina/ →Please star us ;)
- Documentation
- Deployment to cloud with JinaD: link.
- Jina Slack Community: https://slack.jina.ai →we're all here for your questions

WE ARE HIRING!

- Software Engineering
- Machine Learning Software Engineer
- Front-end Engineer
- Tech Evangelist

jobs.jina.ai

Questions?