



# Accessing CDI content via Primo/Summon APIs

ELUNA 2023 Conference – Developers Day

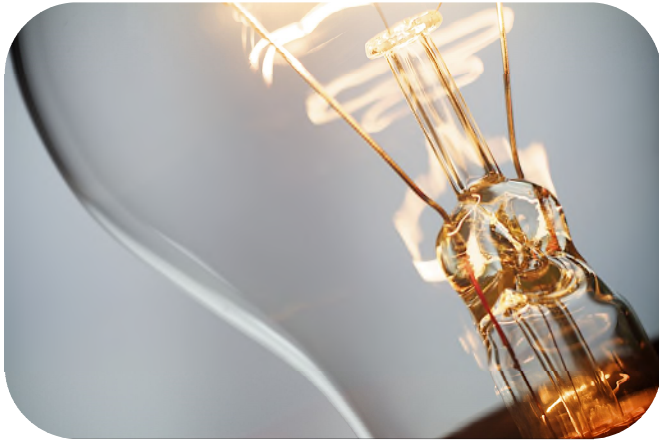
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# Inspiration



## 2023 Hackathon

February 7-8  
Seattle, Washington  
Jerusalem, Israel



# Agenda

- CDI High Level Overview
- Access via Primo API
- Access via Summon API
- Hackathon Example



# Central Discovery Index

## Big Data

5+ Billion Records

## Diverse Content

100+ Content Types



## Multilingual

50+ languages

## High Availability

Replicated across  
data centers

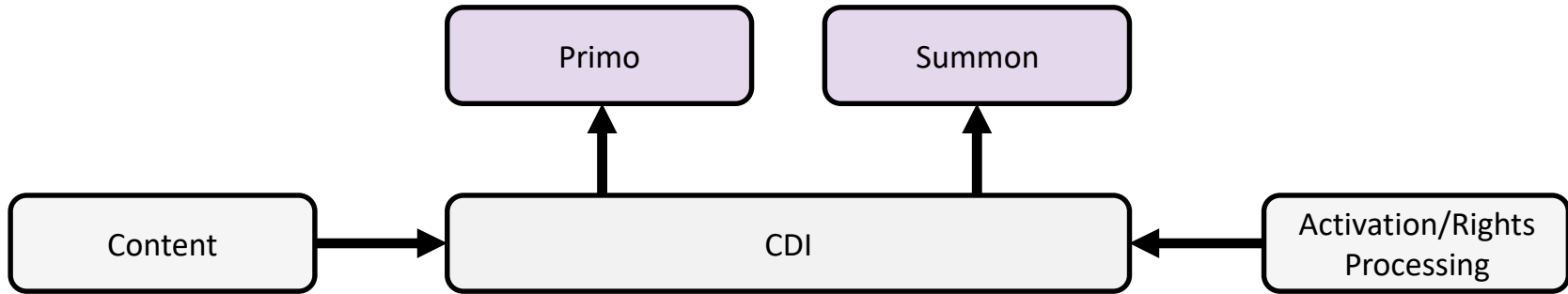
## Performant

Hundreds of queries  
per second



# Central Discovery Index

The very, very, *very*... simplified architecture diagram



CDI is Built on open-source technologies



OpenJDK



# Primo API

<https://developers.exlibrisgroup.com/primo/apis/>

## Access CDI via the Primo Search API

- Authentication: Developer Network API Key
- URL: <https://api-na.hosted.exlibrisgroup.com/primo/v1/search>



# Demo



# Primo API

GET https://api-na.hosted.exlibrisgroup.com/primo/v1/search?q=doi,contains,10.1002/anie.201609229&scope=CentralIndex&vid=EXLDEV1\_INST:Alma&tab=default\_tab&apikey= [Send]

Params Authorization Headers (6) Body Pre-request Script Tests Settings Cookies

Query Params

Key	Value	Description	Bulk Edit
<input checked="" type="checkbox"/> q	doi,contains,10.1002/anie.201609229		
<input checked="" type="checkbox"/> scope	CentralIndex		
<input checked="" type="checkbox"/> vid	EXLDEV1_INST:Alma		
<input checked="" type="checkbox"/> tab	default_tab		
<input checked="" type="checkbox"/> apikey			
Key	Value	Description	

Body Cookies Headers (13) Test Results Status: 200 OK Time: 588 ms Size: 16.32 KB Save as Example

Pretty Raw Preview Visualize JSON

```
... systems. In particular, the in vitro design, synthesis, and transfer of complete genomes into host cells point to the future of synthetic biology: the creation of designer cells with tailored desirable properties for biomedicine and biotechnology. \nExciting times for synthetic biology: Cells are being engineered to produce drugs and biofuels, entire genomes are being synthesized from scratch, proteins and DNA molecules are being equipped with unnatural functions, and recent progress in genome engineering promises to revolutionize biomedicine and biotechnology. This Review gives a comprehensive overview of different research areas in synthetic biology.
177
178
179     "title": [
180       "Synthetic Biology-The Synthesis of Biology"
181     ],
182     "creator": [
183       "Austriacher, Siann ; Ausländer, David ; Fassneger, Martin"
184     ],
185     "subject": [
186       "Amino acids ; bioengineering ; Biofuels ; Biological products ; Biology ; Biomaterials ; Biomedical materials ; Biotechnology ; chemical biology ; Chemical synthesis ; Fine chemicals ; genome engineering ; Genomes ; Industrial engineering ; Manufacturing engineering ; metabolic engineering ; Nucleotides ; Polymers ; Sustainability ; Synthesis ; Synthetic biology"
187     ],
188     "language": [
189       "eng"
190     ],
191     "source": [
192       "Wiley Online Library - AutoHoldings Journals"
193     ]
194   }
195 }
```



# Summon API

<https://developers.exlibrisgroup.com/summon/apis/>

## Access CDI via the Summon Search API

- Authentication: Header formed with Secret Key
- URL: <https://api.summon.serialssolutions.com/2.0.0/search/>



# Demo



# Summon API

GET http://api.summon.serialsolutions.com/2.0.0/search?s.q=DOI:"10.1002/anie.201609229" Send

Params Authorization Headers (15) Body Pre-request Script Tests Settings Cookies

Query Params

Key	Value	Description
<input checked="" type="checkbox"/> s.q	DOI:"10.1002/anie.201609229"	
<input type="checkbox"/> s.cache	f	
<input type="checkbox"/> s.ps	5	
<input type="checkbox"/> s.ho	1	
<input type="checkbox"/> s.role	authenticated	
Key	Value	Description

Body Cookies Headers (8) Test Results Status: 200 OK Time: 691 ms Size: 162.77 KB Save as Example

Pretty Raw Preview Visualize JSON

```
1131     }
1132   ],
1133   "SSID": [
1134     "ssj0028906"
1135   ],
1136   "isOpenAccess": [
1137     "true"
1138   ],
1139   "Title": [
1140     "Synthetic Biology—The Synthesis of Biology"
1141   ],
1142   "URI": [
1143     "crossref_primary_10_1002_cbic_201709441",
1144     "crossref_primary_10_1016_j_wattd_2018_04_006",
1145     "crossref_primary_10_1016_j_ifacol_2019_12_248",
1146     "crossref_primary_10_1016_j_coish_2017_09_003",
1147     "crossref_primary_10_1038_s41467_021_24103_x",
1148     "crossref_primary_10_1002_aic_17466",
1149     "crossref_primary_10_1021_acsonoga_8b03011",
```



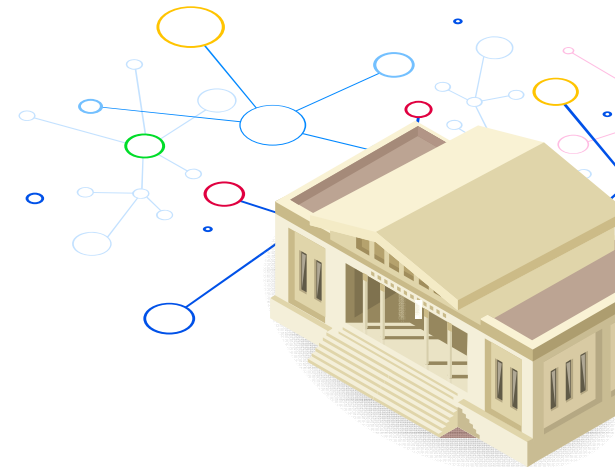
# Back to Hackathon

## Translated Search

An AI-assisted Global Literature  
Discovery Tool for Today's Researchers

## Kazuaki Maeda

Principle Software Engineer





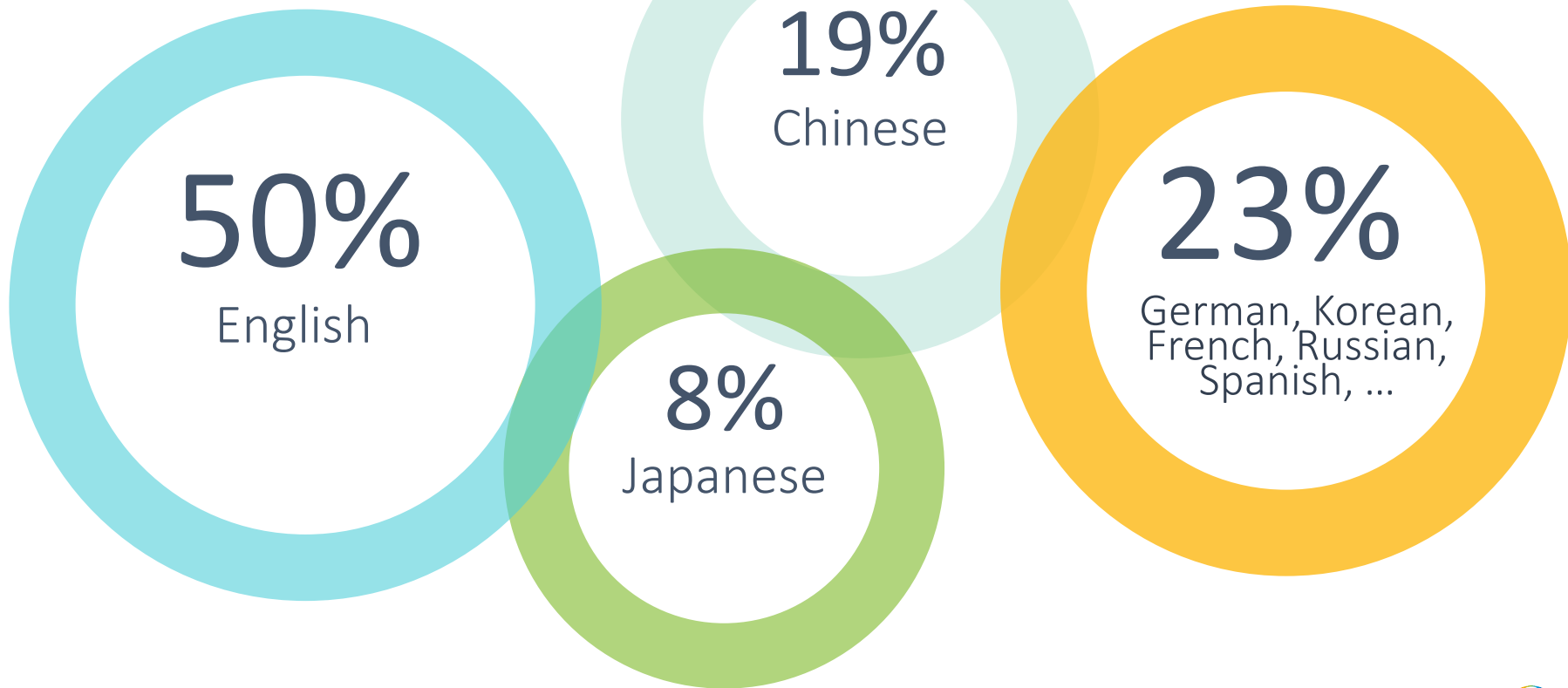
# Hackathon: Translated Search

*English is often considered to be the "lingua franca" of scientific publications.*

*But can researchers ignore non-English publications?*



# Hackathon: Translated Search



## Code Review & Demo



# Hackathon: Translated Search

## Open Sourced

<https://github.com/summon/translated-search>



# Hackathon: Translated Search

summon / translated-search Public

<> Code Issues Pull requests Projects Wiki Security Insights Settings

Code

master + Q

Go to file t

- translatedsearch
  - static
  - templates
  - utils
    - \_\_init\_\_.py
    - googletranslate.py
    - summonapi.py
    - translatedsearcher.py
    - \_\_init\_\_.py
    - settings.py
    - translatedsearch\_ui.py
    - .gitignore
    - README.md
    - requirements.txt

translated-search / translatedsearch /

afreisthler full application

Name	Last commit message
..	
static	full application
templates	full application
utils	full application
__init__.py	full application
settings.py	full application
translatedsearch_ui.py	full application



# Hackathon: Translated Search

```
Code | Blame | Executable File · 51 lines (43 loc) · 1.85 KB
1 import json
2 import base64
3 import hashlib
4 import hmac
5 import requests
6 from urllib.parse import urlencode, quote_plus, unquote_plus
7 from datetime import datetime
8
9 from translatedsearch import settings
10
11
12 class SummonAPI:
13     def __init__(self):
14         self.host = settings.SUMMON_API_HOST
15         self.path = '/2.0.0/search'
16         self.default_params = {'s.hl': 'false', 's.ho': 'false', 's.light': 'true', 's.ps': '50'}
17
18     def merge_default_params(self, params):
19         params2 = self.default_params
20         params2.update(params)
21         return params2
22
23     def search(self, params):
24         params = urlencode(self.merge_default_params(params), doseq=True, quote_via=quote_plus)
25
26         headers = self._build_headers(params)
27         url = 'http://{}/{}/{}'.format(self.host, self.path, params)
28         response = requests.get(url, headers=headers)
29         response.raise_for_status()
30         return response.text
31
32     def _build_headers(self, query):
33         accept = 'application/json'
34         date = datetime.utcnow().strftime('%a, %d %b %Y %H:%M:%S GMT')
35         query_string = unquote_plus('&'.join(sorted(query.split('&'))))
36         id_string = "%n".join([accept, date, self.host, self.path, query_string]) + "\n"
37         auth_string = self._build_auth_string(id_string)
38         return {'Accept': accept,
39               'x-summon-date': date,
40               'Host': self.host,
41               'Authorization': auth_string}
42
43     def _build_auth_string(self, id_string):
44         key = bytes(settings.SUMMON_API_KEY, 'UTF-8')
45         message = bytes(id_string, 'UTF-8')
46         hashed_code = hmac.new(key,
47                                message,
48                                hashlib.sha1).digest()
49         digest = base64.encodebytes(hashed_code).decode('UTF-8')
50         auth_string = 'Summon {}:{}'.format(settings.SUMMON_ACCESS_ID, digest)
51         return auth_string.replace('\n', '')
```



# Hackathon: Translated Search

## CDI 2023 Hackathon - Translated Search

### CDI Translated Search

Search   
Search string using search system syntax

Target Language   
Select supported language from dropdown

The system found 146 records when searching for 猫白血病 in Chinese journal articles

Title	Title_trans	Subtitle	Subtitle_trans	Author	Author_trans	PublicationTitle	PublicationTitle_trans	PublicationDate	ContentType	Language	ISSN
<a href="#">猫白血病的临床特征及防治策略</a>	Clinical Features and Prevention and Treatment Strategies of Feline Leukemia			丁晓	Ding Xiao	兽医导刊	Veterinary Tribune	2019	Journal Article	Chinese	1673-8586
<a href="#">猫白血病病毒的检测及 pol 基因遗传进化分析</a>	Detection of Feline Leukemia Virus and Analysis of Genetic Evolution of Pol Gene			张传美	Zhang Chuanmei	动物医学进展	Dongwu yixue jinzhan	2020	Journal Article	Chinese	1007-5038
<a href="#">猫白血病C亚类病毒受体1的反义RNA1靶向抑制微小RNA-515-5p表达对鼻咽癌细胞增殖、迁移和侵袭的影响</a>	Antisense RNA 1 of feline leukemia subtype C virus receptor 1 targets the expression of microRNA-515-5p on the proliferation, migration and invasion of nasopharyngeal carcinoma cells			邱显本	Qiu Xianben	中国兽医学报	Zhongguo er bi yan hou tou jing wai ke	2021	Journal Article	Chinese	1672-7002
<a href="#">猫白血病 (FeL) 的诊断和防治现状</a>	Diagnosis and prevention status of feline leukemia (FeL)			王久成 潘美秀 魏美华 王亚君	Wang Jiucheng Pan Meiqiao Wei Meihua Wang Yajun	黑龙江畜牧兽医	Heilongjiang xumu shouyi	2016	Journal Article	Chinese	1004-7034
	Diagnosis,										



# Lessons Learned and Future Opportunities

- Significant power in API integrations
- Only your imagination limits possibilities
- Room for improvement if desired
  - Institution level authentication is limiting
  - Result set sizes are limiting







# Questions?



# Thank you!

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