



GovFlix

A behind the scenes look at a
content recommendation system



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Community Day 2024

Why are you here today?

Hmmmmm

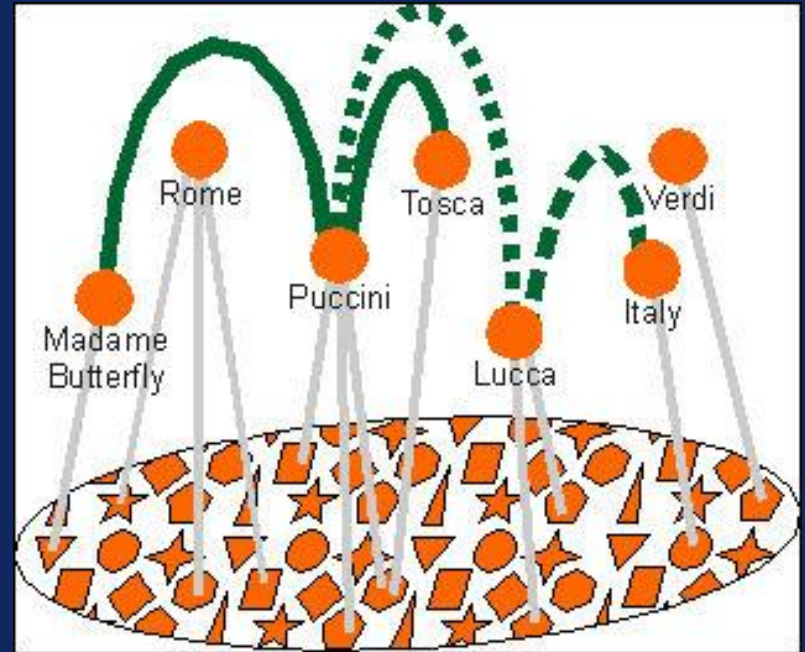
For me it is

- Open source technology
- Community
- **Knowledge management**
- Do cool stuff

Knowledge management

Topic Maps

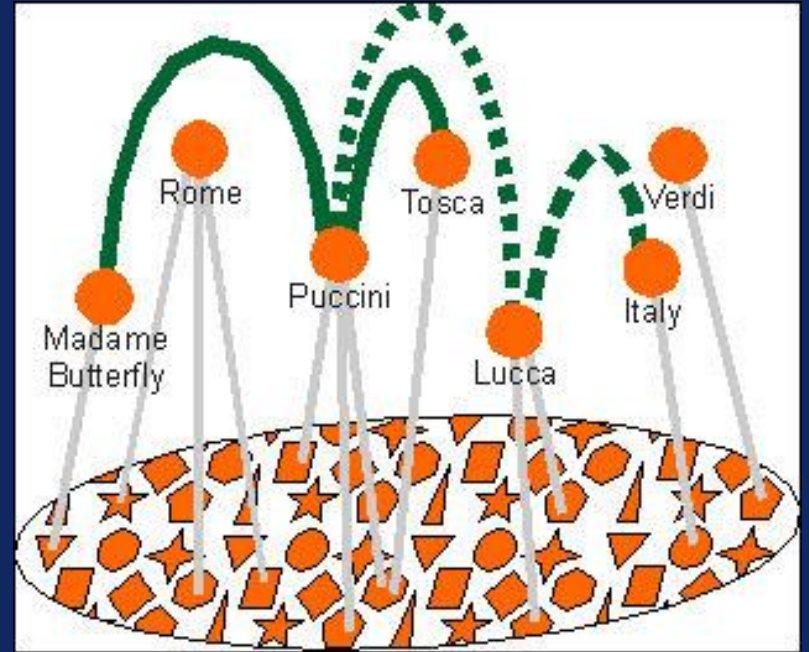
- **Topics**
- Resources
- Associations
- Occurrences



The TAO of Topic Maps, Steve Pepper

Drupal

- Content
- Fields (references)
- Media



The TAO of Topic Maps, Steve Pepper

**Structure is important
but there are
new ways
to arrange content**

Collaborative filtering

A method of making **automatic predictions (filtering)** about the interests of a user by collecting preferences or taste **information from many users (collaborating)**. The underlying assumption of the approach is that if persons A and B have the same opinion on one issue, then they are more likely to agree on other issues than are A and a randomly chosen person.

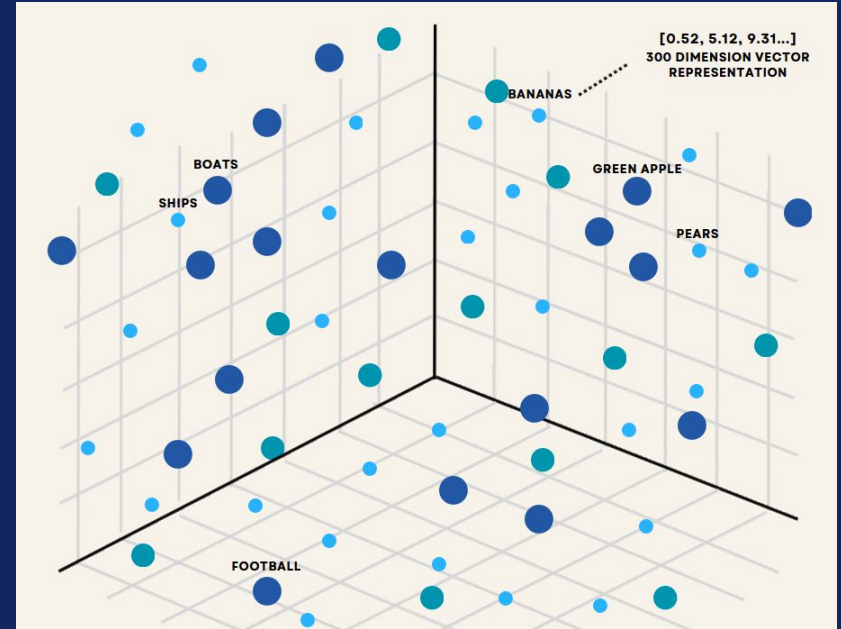
https://en.wikipedia.org/wiki/Collaborative_filtering



Vector databases

Vector databases typically implement one or more Approximate Nearest Neighbor algorithms, so that one can search the database with a query vector to retrieve the closest matching database records.

https://en.wikipedia.org/wiki/Vector_database



<https://zilliz.com/learn/vector-database-vs-graph-database>

New approach

Current approach

- Explicitly defined (ontologist)
- Manually maintained (editors)
- Static (captured as content)

New approach

- Implicitly defined
- Automatic
- Dynamic

When is this useful?

- Large corpuses
- Unknown relationships
- Fast moving content
- Editor burden

Where is it used?

- Commerce (Amazon)
- Media (Facebook, LastFM, YouTube, Instagram, TikTok)
- Publishing (News sites)
- Government

Introducing Recombee

AI powered recommender as a service

<https://www.recombee.com>

Features

- User tracking
- Content index
- Scenarios
- Filters
- Boosts
- Recommendations
- Analytics

Algorithms

Blended approach

- Affinity - Collaborative filtering
- Popularity
- Recency
- Similarity
- History

Scenarios

Common use cases

- For you
- Trending now
- Just added
- Recently viewed
- Related
- Editor picks

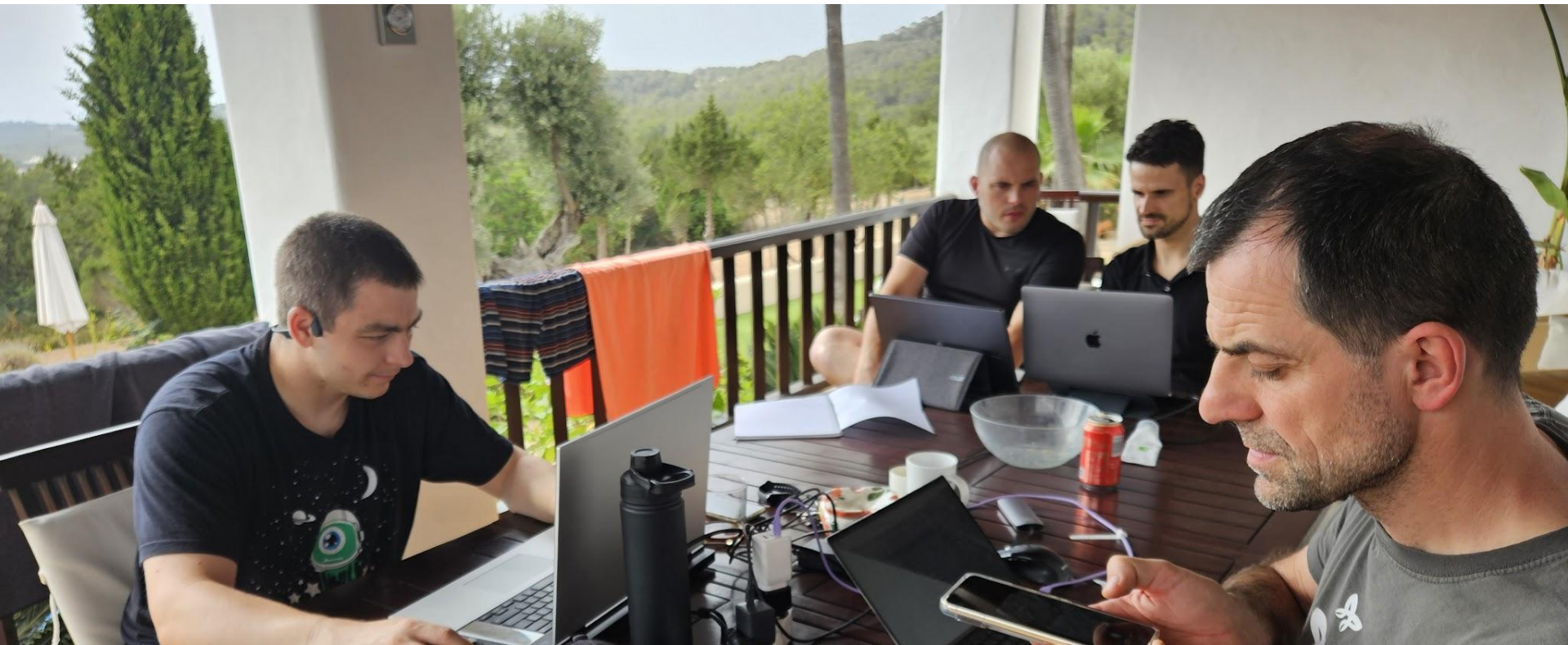
Introducing GovFlix

Personalised video content for the design and implementation of government websites

GovFlix is an educational site with personalised videos for people who build government websites interested in accessibility, AI, content strategy and content management.

[Find out more](#)

Top picks



Coding fun: All sprints should look like this.

Technologies

The stack

- GovCMS SaaS
- Recombee
- Convivial for GovCMS (starter site)
- CivicTheme

Show me how

Recipe

Mixing the ingredients...

- Defining the index and scenarios
- Syncing the data
- Tracking the user
- Getting the recommendations
- Displaying the items

Recombee index and fields



Database

ANALYTICS

KPI

Insights

CATALOG

Items

Users

Segmentations

Series

RECOMMENDATIONS

Scenarios

Business Rules

Search Synonyms

Data Quality Score

55%

Items 238 items

Manage Properties

Filter items...

itemId	audiences	body	changed	created	date
STRING	SET	STRING	TIMESTAMP	TIMESTAMP	TIMESTAMP
flix-174	{"audience-government... more"}	NULL	Tue, 24 Sep 2024 12:05:52 UTC	Tue, 24 Sep 2024 12:00:51 UTC	Thu, 20 Oct 2022 12:00:00 UTC
flix-233	{"audience-government... more"}	NULL	Wed, 25 Sep 2024 16:32:35 UTC	Wed, 25 Sep 2024 16:27:01 UTC	Tue, 07 Nov 2023 12:00:00 UTC
flix-219	{"audience-government... more"}	NULL	Wed, 25 Sep 2024 14:32:58 UTC	Wed, 25 Sep 2024 14:30:18 UTC	Tue, 07 Nov 2023 12:00:00 UTC
flix-247	{"audience-government... more"}	NULL	Mon, 30 Sep 2024 12:08:35 UTC	Mon, 30 Sep 2024 12:06:24 UTC	Wed, 11 Dec 2013 12:00:00 UTC
flix-249	{"audience-government... more"}	NULL	Mon, 30 Sep 2024 13:53:05 UTC	Mon, 30 Sep 2024 13:43:12 UTC	Sun, 21 Jul 2019 12:00:00 UTC
flix-179	{"audience-government... more"}	NULL	Tue, 24 Sep 2024 12:55:51 UTC	Tue, 24 Sep 2024 12:52:25 UTC	Fri, 12 Nov 2021 12:00:00 UTC
flix-175	{"audience-government... more"}	NULL	Tue, 24 Sep 2024 12:10:16 UTC	Tue, 24 Sep 2024 12:05:56 UTC	Thu, 20 Oct 2022 12:00:00 UTC
flix-250	{"audience-government... more"}	NULL	Mon, 30 Sep 2024 13:56:55 UTC	Mon, 30 Sep 2024 13:53:50 UTC	Fri, 05 Nov 2021 12:00:00 UTC

Items Properties

+ Create Property



Search Properties...

audiences SET

body STRING

changed TIMESTAMP

created TIMESTAMP

date TIMESTAMP

exclude BOOLEAN

image IMAGE

modified TIMESTAMP

Recombee Scenarios



Database

Users

Segmentations

Series

RECOMMENDATIONS

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Business Rules

Search Synonyms

INTEGRATION

Catalog Feed

Widgets

Issues

GENERAL

Manage Access

Data Quality Score 55 %



Scenarios



+ Create Scenario



Scenario defines a particular application of the recommendations. It can be for example homepage, watch-next or emailing-after-purchase. You can apply various settings to each Scenario. [Read more](#)

Global Settings ?

No Filters or Boosters

Actions



ID



Filters



Search Scenarios...



recently-added

Items to User recombee:personal

30
recomms/7d



recently-viewed

Items to User recombee:recently-viewed

30
recomms/7d



related

Items to Item recombee:similar

no data
in last 7 days



search

Search Items search:personalized

14
recomms/7d





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Scenarios > top-picks Items to User

Preview Results

Update

Logic

Filters (3)

Boosters (0)

Constraints (0)

Other

Integration

Analytics

History



The logic allows you to specify the desired behavior of the recommendation model.

Logic type

recombee:personal

Universal model ensemble suitable for user-based recommendations reflecting the personal tastes of the current user.

Requirements

- There must be interaction data for the user.

Items from particular category [string]



Allow only items from particular category. The rule assumes that category of item is a string property.

Category property **STRING** ?

type

Category name **STRING** ?

Article

Items with boolean property



Item property **BOOLEAN**

exclude

Value **BOOLEAN**



Drupal catalog feed

```
{
  title: "Personalization & Government: The Odd Couple or Perfect Match?",
  summary: "Think personalization is off limits because you run a government website? Well, it doesn't have to",
  url: "https://www.govflix.net/news/presentations/personalization-government-odd-couple-or-perfect-match",
  video: "https://youtu.be/H0l0L1YEr9Y?feature=shared",
  image: "https://www.govflix.net/sites/default/files/styles/landscape_hi/public/images/2024-10/Personalization",
  body: "",
  changed: "2024-10-09 13:33:53",
  created: "2024-10-09 13:31:55",
  status: "True",
  exclude: "False",
  date: "2019-07-16 12:00:00",
  type: "Article",
  item-id: "flix-269",
  site: "flix",
  topics: "topic-personalisation,topic-recommendations,topic-user-experience",
  audiences: "audience-suppliers,audience-government,audience-industry"
},
```

<https://www.govflix.net/data/export/all>



Database

RECOMMENDATIONS

Scenarios

Business Rules

Search Synonyms

INTEGRATION

Catalog Feed

Widgets

Issues

GENERAL

Manage Access

Settings

Go to Organization



Catalog Feed



+ Add Feed



JSON Feed

https://www.govflix.net/data/export/all

Edit Feed



Update Logs

Settings

Mapping Rules

🔄 Catalog is updated every 4 hours



Skipped

Nov 13, 2024 17:02

Feed hasn't changed since last update

-
Updated

-
Disabled

-
Errors



Skipped

Nov 13, 2024 13:00

Feed hasn't changed since last update

-
Updated

-
Disabled

-
Errors



Skipped

Nov 13, 2024 09:00

Feed hasn't changed since last update

-
Updated

-
Disabled

-
Errors

More



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Tracking in Drupal

Convivial for Civic theme settings

Import redirects

Meta

Convivial Profiler

Matomo

Recombee tracker

Implement Recombee recommendation system to your website.

Enabled

Enable Recombee tracking

Recombee tracking

Opt into Recombee tracking. Set `RecombeeCookieConsent = 1` if the user does not have the cookie.

Database Id *

morph-flix-convivial-civic

The Database Id on the Recombee server

Public Token *

The Public Token on the Recombee server

Region

ap-se

The Region on the Recombee server - baseUri and region cannot be specified at the same time

Base uri

Specify the base uri for the Recombee script - baseUri and region cannot be specified at the same time

Use HTTPS

Specify if the Recombee script should use HTTPS.

Allowed domains

live-govflix.pantheon.io,govflix.net,www.govflix.net

Specify the domains where the Recombee script is permitted to execute.

Allowed content types

article,article_type,audience,event,foi,collection,page,resource,topic

Allowed content types for Recombee.

Allowed roles

anonymous

Allowed roles for Recombee - Anonymous, Registered or both.

Cookie expiry

365


Sets the number of days for the RecombeeUserId cookie to expire. Leave blank for session cookie.

Recombee Scenario Paragraph

Components

Collapse all



 Recombee Sce...

Collapse



Title *

The label used only on edit screens.

Heading

Heading displayed above the chart.

Scenario *

The Recombee Scenario to use when returning results (see "Scenarios" page for a database).

Type *

The Recombee Scenario recommendation type.

Page Size *

The number of results to return.

Template *



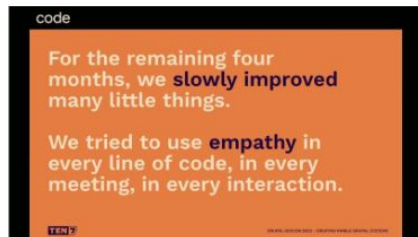
The template to use to display the results.

Top picks

The best recommendations for you based on your interests.



Rapid Response: How we build some of Australia's most important COVID websites with Drupal



Creating Nimble Drupal Systems for Government: Transforming MN's Dept of Health in 6 Months



Scanning the Australian Government ecosystem. How popular is Drupal down under?



Drupal and the Open Web in the Australian Government - 2024 edition

Takeaways

Loosely coupled

The right tool for the job.

- Drupal is the CMS
- Integrations provide the smarts

Get off the island. Some things cannot be invented here.

GovCMS SaaS FTW

Limitations were overcome.

- Frontend integrations - public API
- Client side transformations
- Content sync is pulled from Drupal (Views)

Letting go

Part human, part machine.

- Editors are not omniscient
- Editors do not have endless time
- Editors should manage the important metadata
- Let the machine work out what is next

TODO Insert Terminator or Elsa image

Retaining some control

Tune the scenarios

- Similarity
- Recency
- Editor picks

Design the system

- Use selectively

Avoiding echo chambers

Provide alternatives:

- Offer generic paths
- Consider the user intent - browsing vs searching

Respecting privacy

- Consider vulnerable users
- Consider sensitive subject matter
- Provide option to opt in/out
- Ensure the system works with no behavioural data

Government

Some content is well suited:

- Content rich: Guidance, Resources, Articles, Alerts
- Vast: 100K+ items
- Clustered: Audience, Topic, Intent

Think of the editors:

- Knowledge
- Time

The future

- Building smarter websites
- Better user experiences
- Faster discovery of content
- More engagement
- Less editor work

Conclusion

Aim

- Deliver something Netflix like
- Use enterprise grade recommendations system
- Reimagine the way content is presented
- Leverage the tools we have

Approach

Leverage available tools

- GovCMS
- Recombee

Rapid development

- Build time of two weeks
- Content populate
- Design

Outcome

- Functional and solid
- Demonstrates core capabilities
- Feasibility of GovCMS SaaS solution
- Useful site :)

Personalised video content for the design and implementation of government websites

GovFlix is an educational site with personalised videos for people who build government websites interested in accessibility, AI, content strategy and content management.

[Find out more](#)

Top picks

Questions



Thank you

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