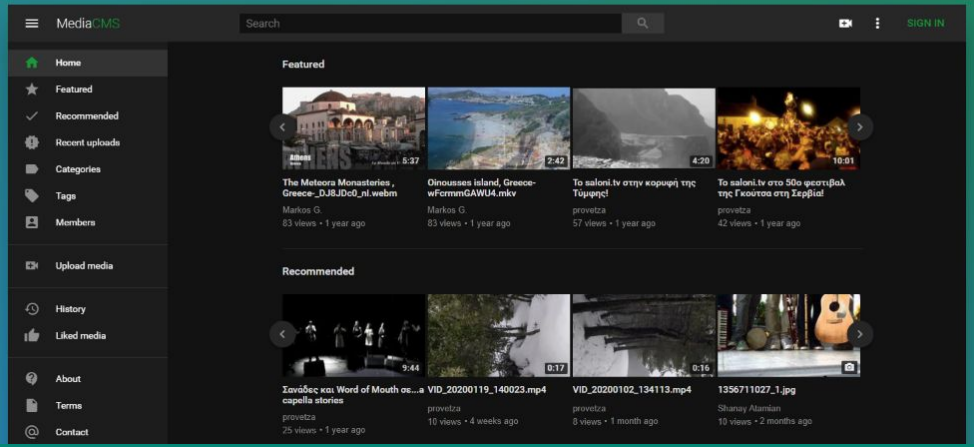
MediaCMS

Modern, fully featured open source
video and media CMS



https://mediacms.io

whoami

- Software Engineer
- FOSS enthusiast
- Consultant for Six Feet Up - https://sixfeetup.com
- Member of Civic Information Office - https://cvcio.org/
- MediaCMS co-creator

MediaCMS

- Modern, fully featured video and media CMS
- Multiple media types support - Video, audio, image, pdf

Features

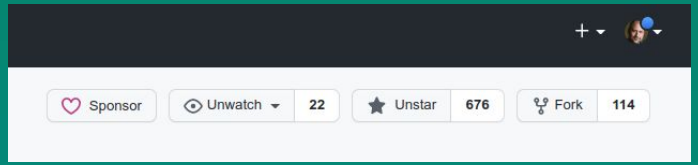
- handles the whole lifecycle of media files
- ingest (chunked upload, API)
- process/identify type
- make available for different devices (videos)

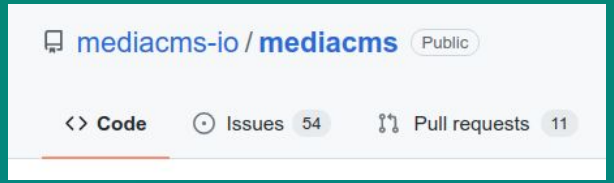
Features

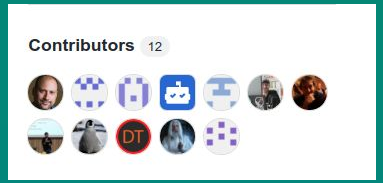
- categorise, share, interact (like/comment/report)
- different workflows support
  - public
  - unlisted
  - private
- different groups (editors/managers/trusted users)

Project Status

- 1 year on Github, 2 years of development
- 3 production installations
- > 300 installations
  - based on the discussions + emails on support list
- GSoC participation + mentoring (2021)





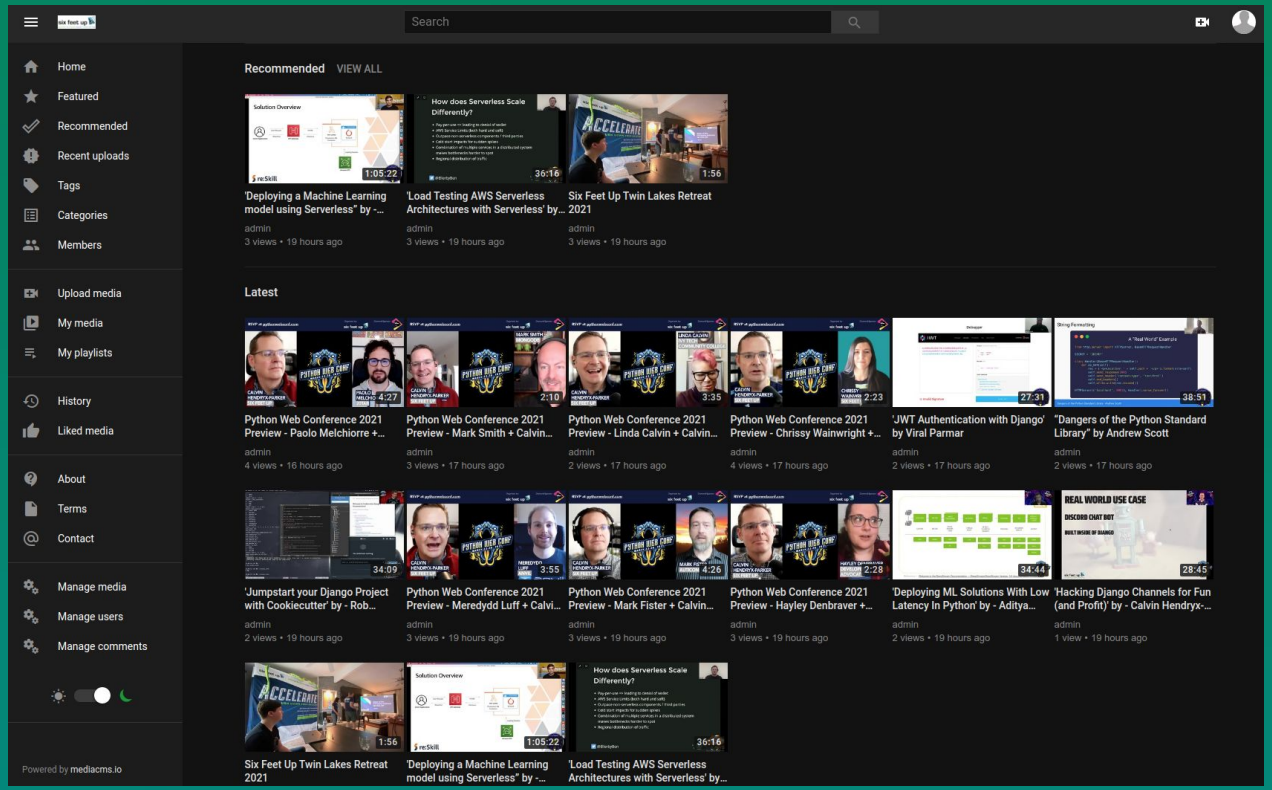


https://mediacms.io

DEMO

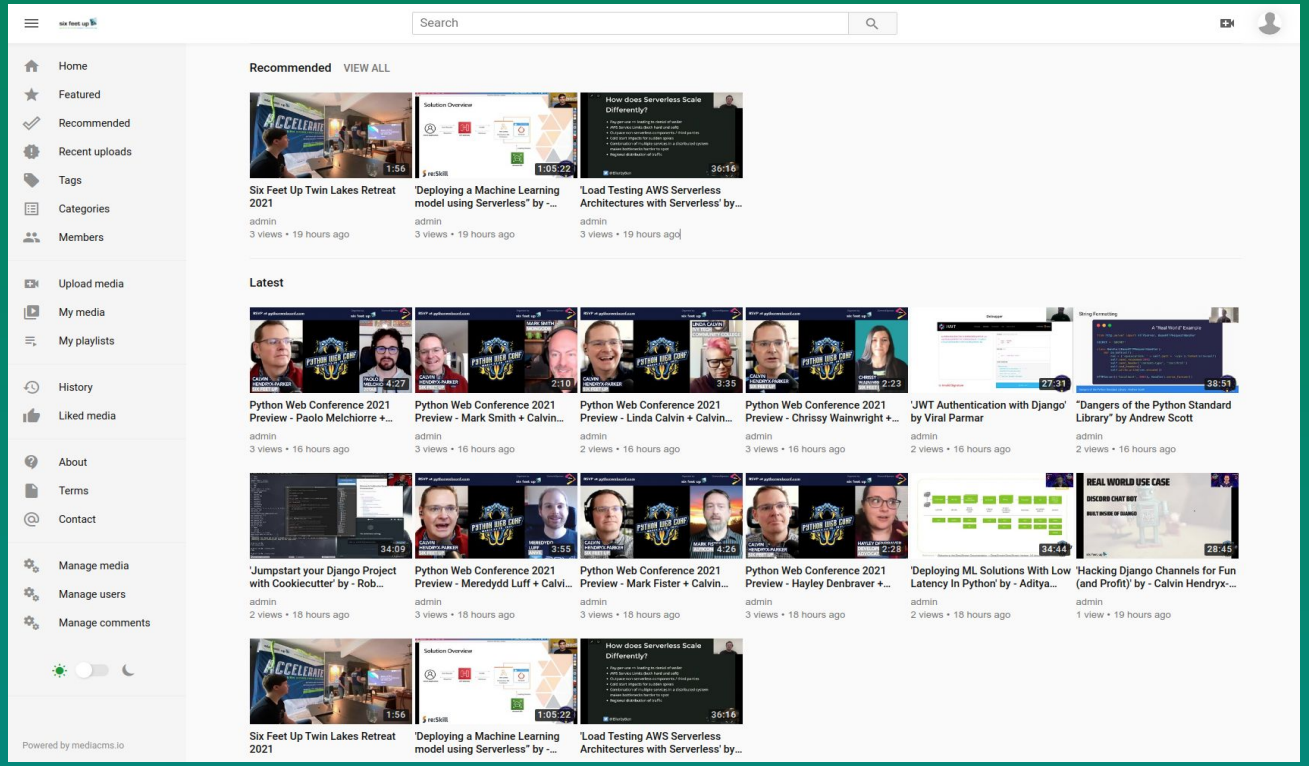
https://mediacms.io

dark theme



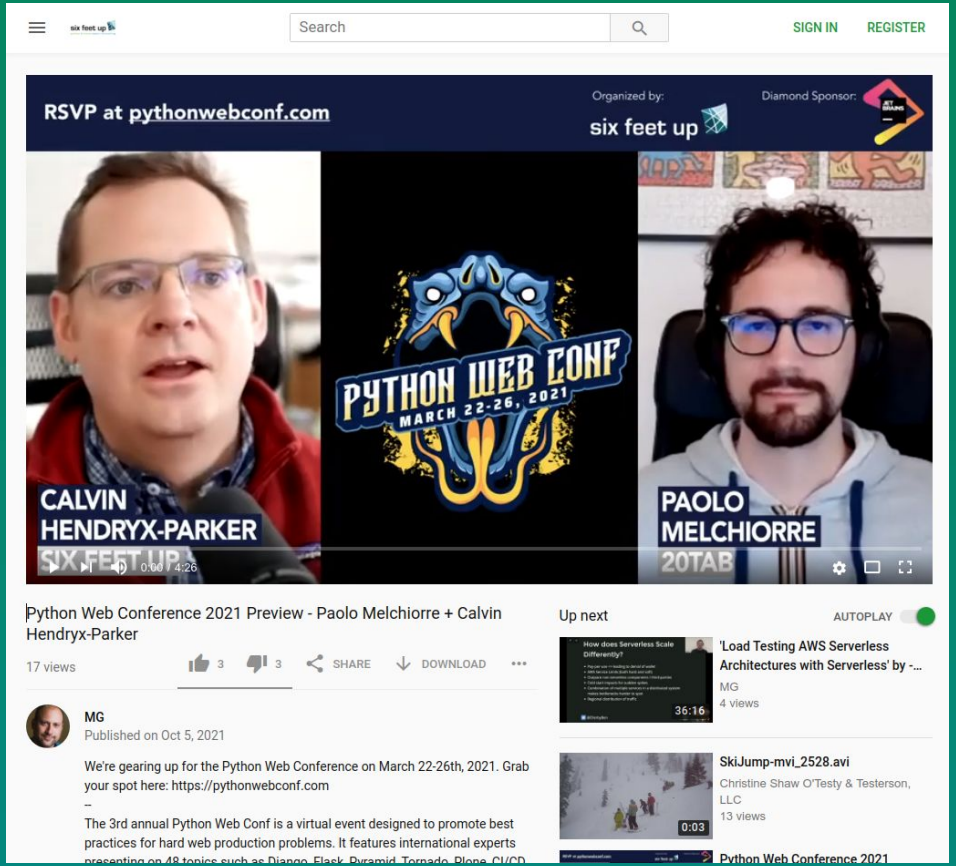
https://mediacms.io

light theme



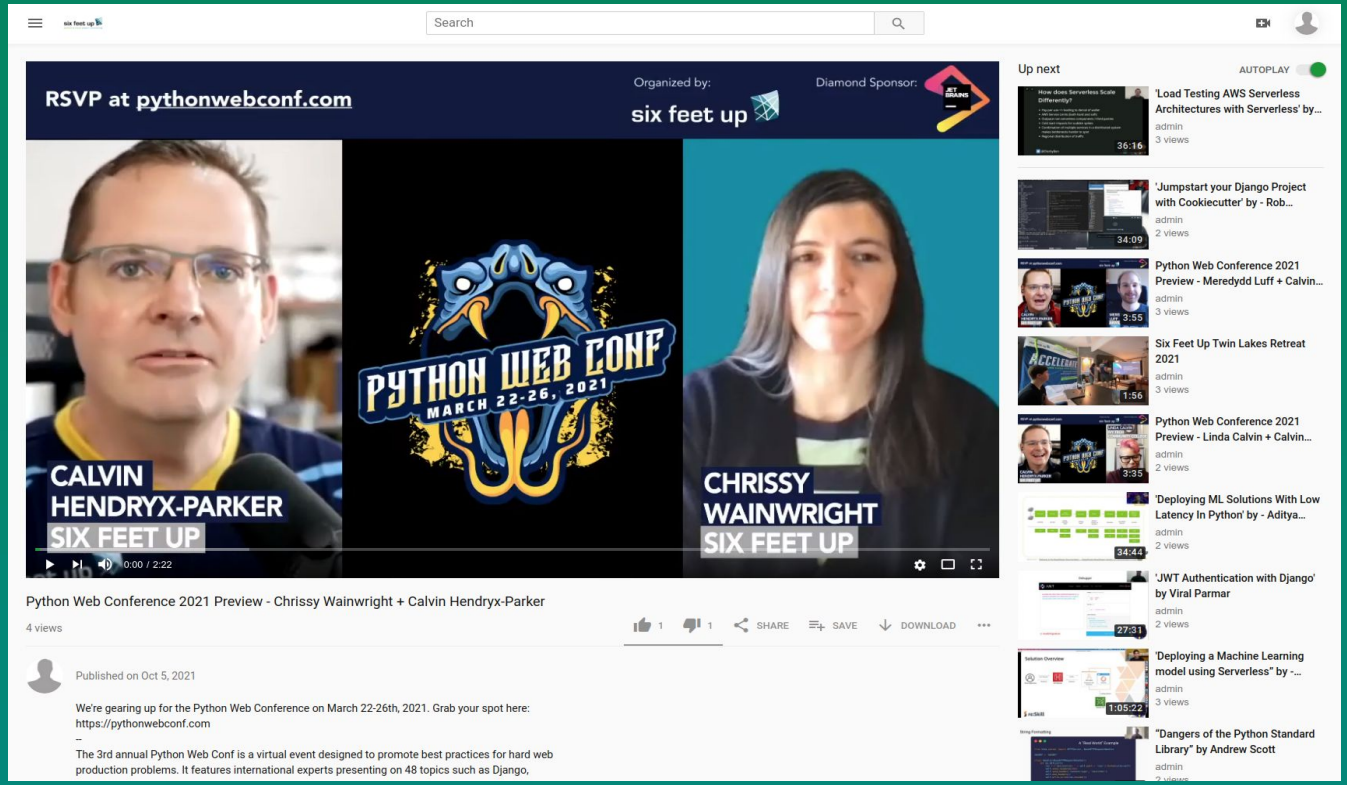
https://mediacms.io

responsive/mobile friendly



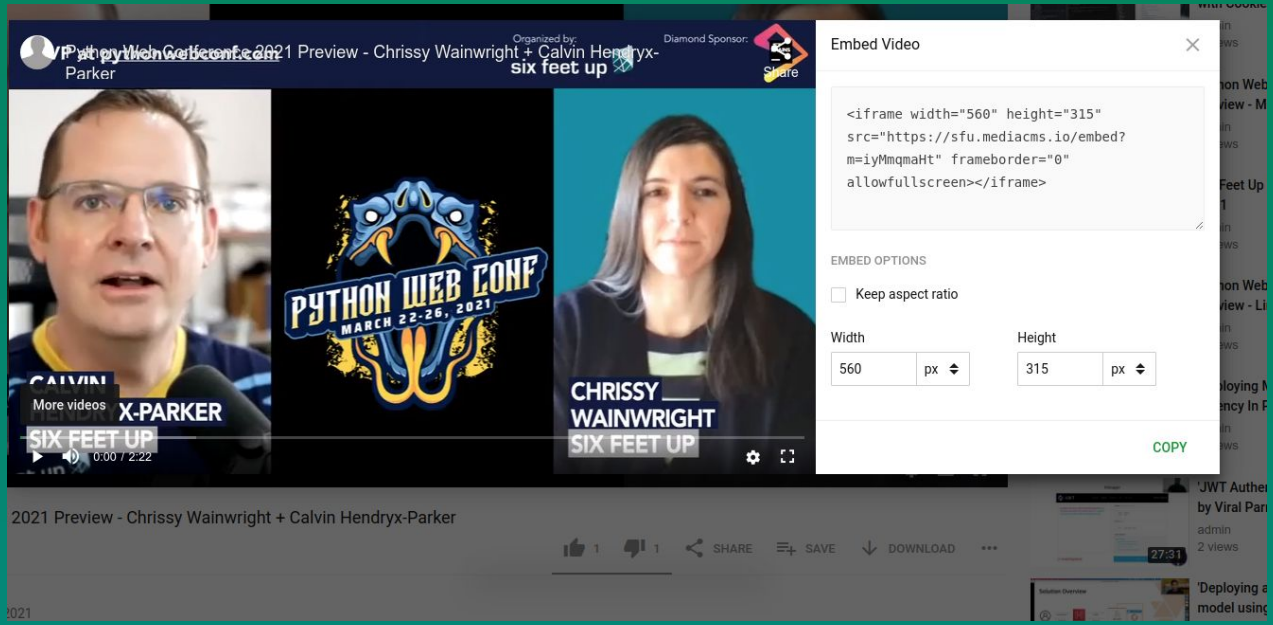
https://mediacms.io

Adaptive streaming (hls), multiple video profiles, related content



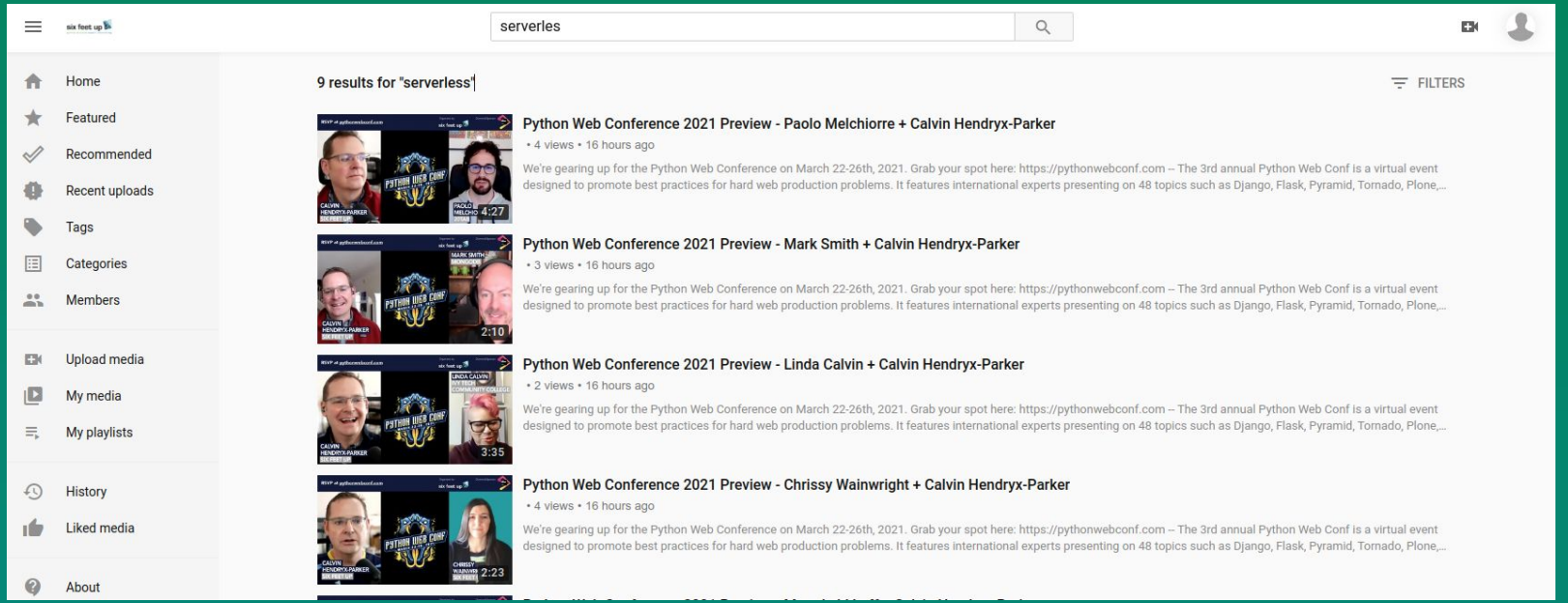
https://mediacms.io

Download, embed, like, report, share actions



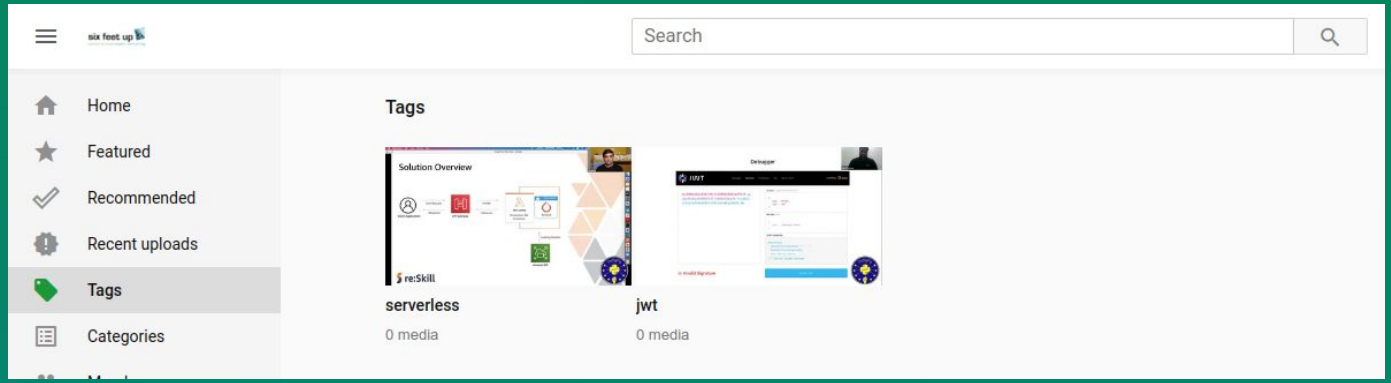
https://mediacms.io

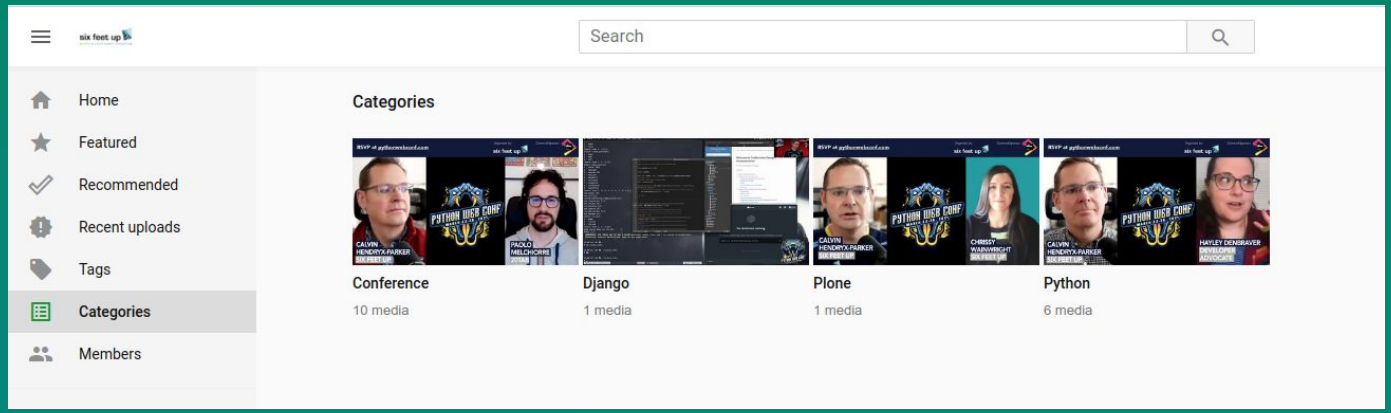
Search



https://mediacms.io

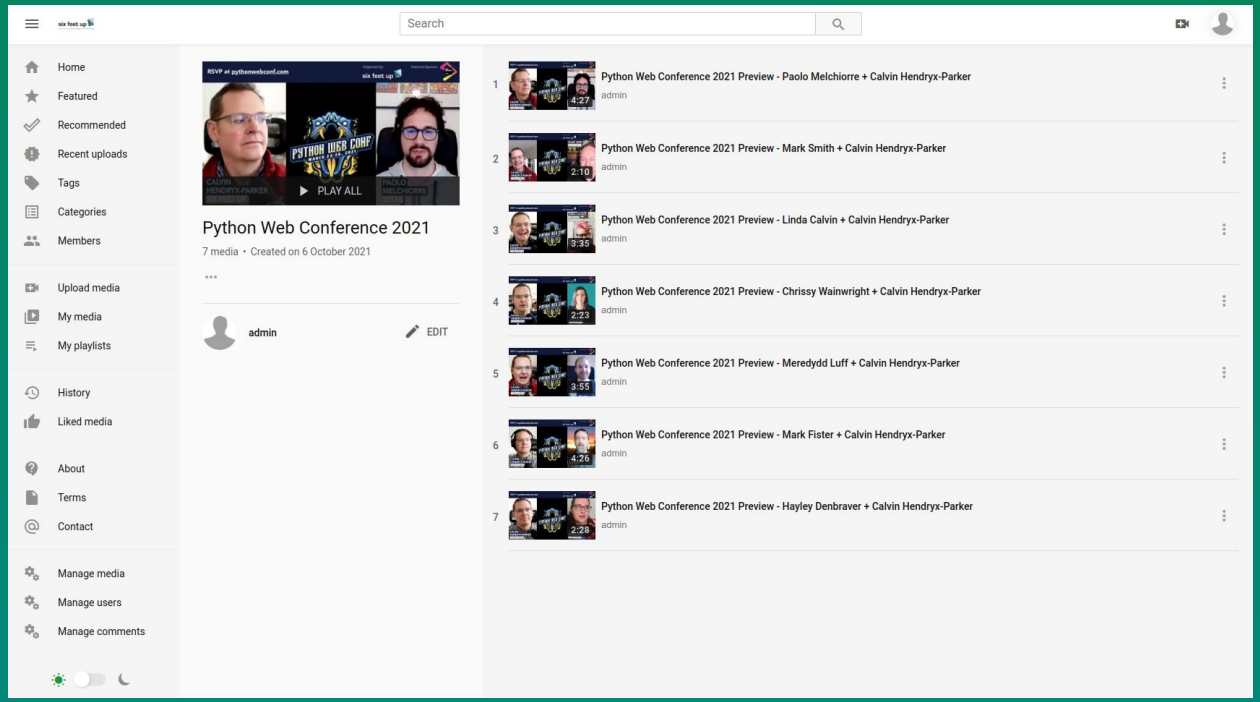
Categories, tags





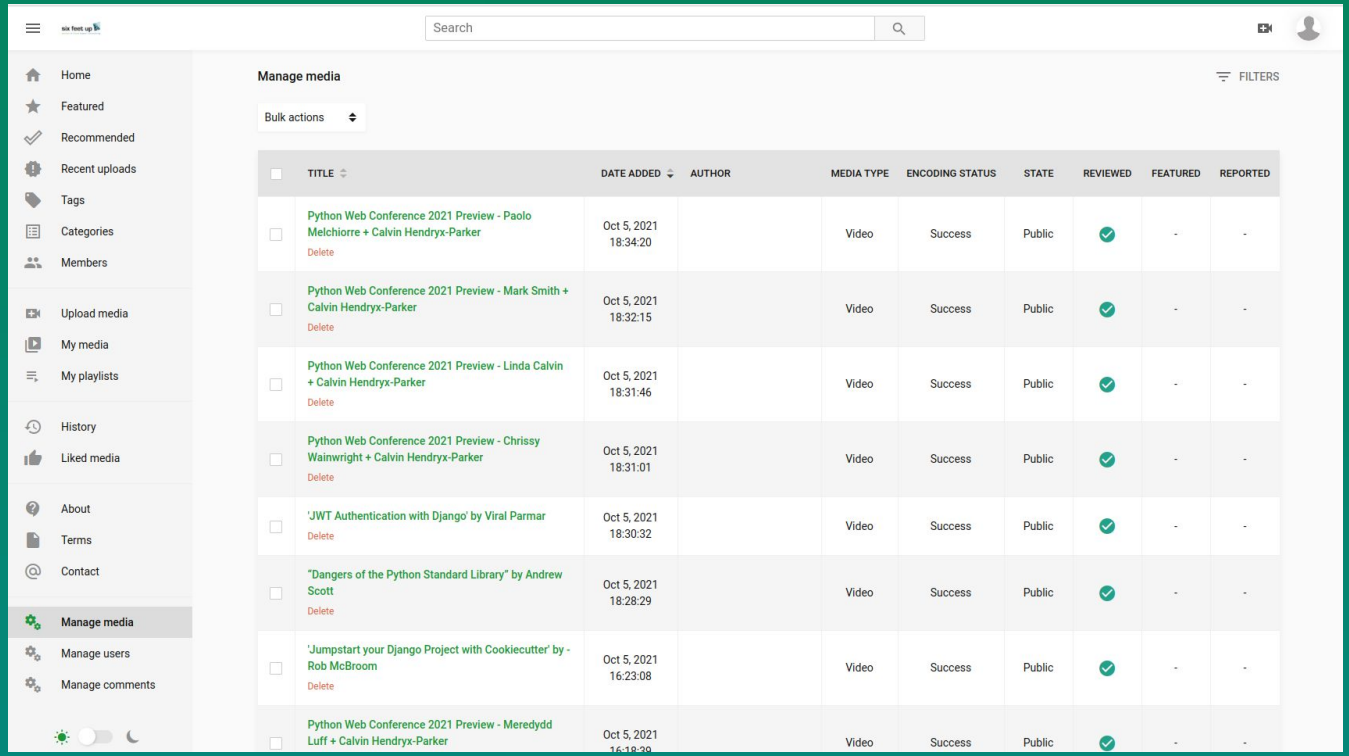
https://mediacms.io

Playlists



https://mediacms.io

Admin pages (users, media, comments)



https://mediacms.io

Use cases

Use cases: self host

- self host media content (video, images, audio, etc)

Use cases: self host

- create video/media portal
  - apply own style
  - add extra functionality
  - keep full control

Use cases: self host

- organizations
  - sensitive content/not to be uploaded to external sites

Use cases: self host

- example: schools, education.
  - Administrators keep what content is published
  - students are not distracted with advertisements and irrelevant content
  - ability to stream or download content

Use cases: media files repository

- example: use on an LMS to handle media files
  - out of the box embed media
  - implement search content + upload to MediaCMS (API)

Use cases: build a portal

- customize all things (URLs, logos, fonts, aesthetics)

Use cases: build a portal

- migrate content from older/legacy OSS software (eg mediacore/kaltura/mediagoblin)

https://mediacms.io

Use cases: build a portal

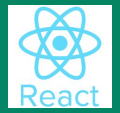
- example use: for conferences, vs uploading to Youtube
  - custom presentation/categorization
  - more control

Use cases: build a portal

- example use: scientific portal
  - with more options, as transcribe
- example use: VOD portal
  - stream content on demand
  - eg based on subscriptions

Tech

Tech Stack



Technology - architecture

- Python3/Django3: backend code
- React: user interface, frontend functionalities
- PostgreSQL: relational database
- Celery: task management (all type of asynchronous tasks)
- ffmpeg: video transcodings

Technology - architecture

- Redis: cache content, support Celery workers
- Nginx: web server
- uWSGI: python application server
- video.js: video player
- Bento4: HLS

Technology: Django + React

- both powerful and very modern technologies
- both very mature and widespread
- distinction of backend/frontend code allows for efficient collaboration between different teams

Tech notes

- design choice: zero time for getting familiar (inspired by Matermost)
  - cannot afford a new/authentic design, better build something everyone is familiar rather than create something clunky

- project goals
  - easy installation/maintenance
  - easy to extend
  - not miss features form major services

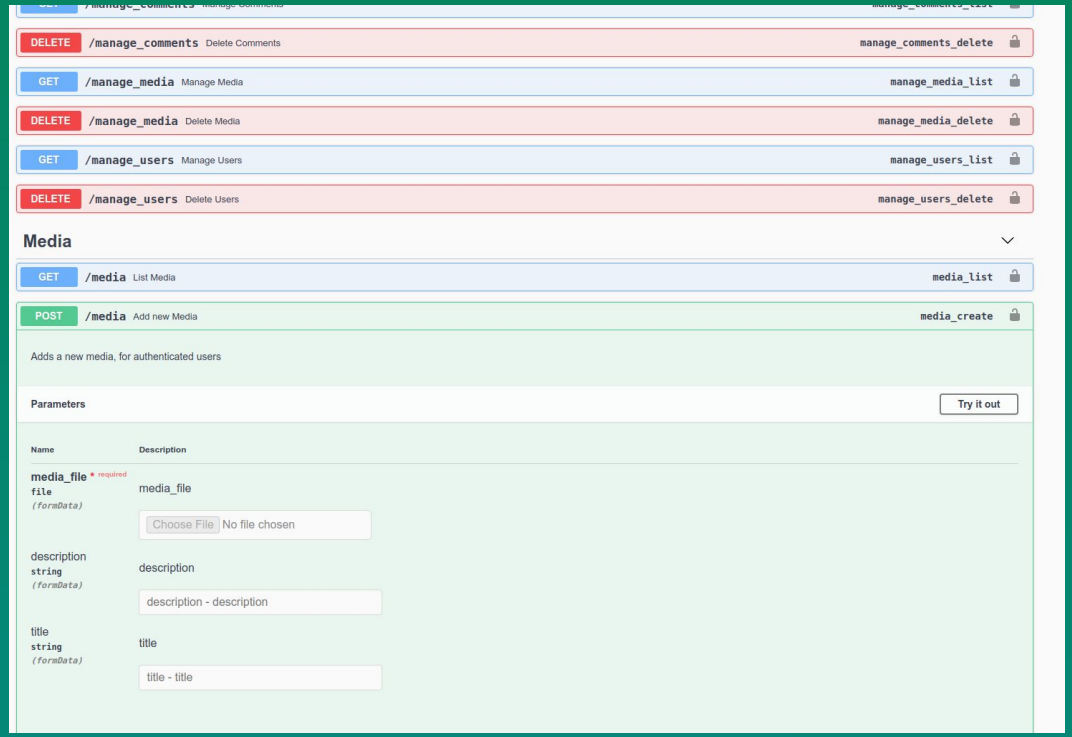
Tech notes

- search uses **PostgreSQL FTS**
  - works great for small/mid cases, vs ElasticSearch

Tech notes

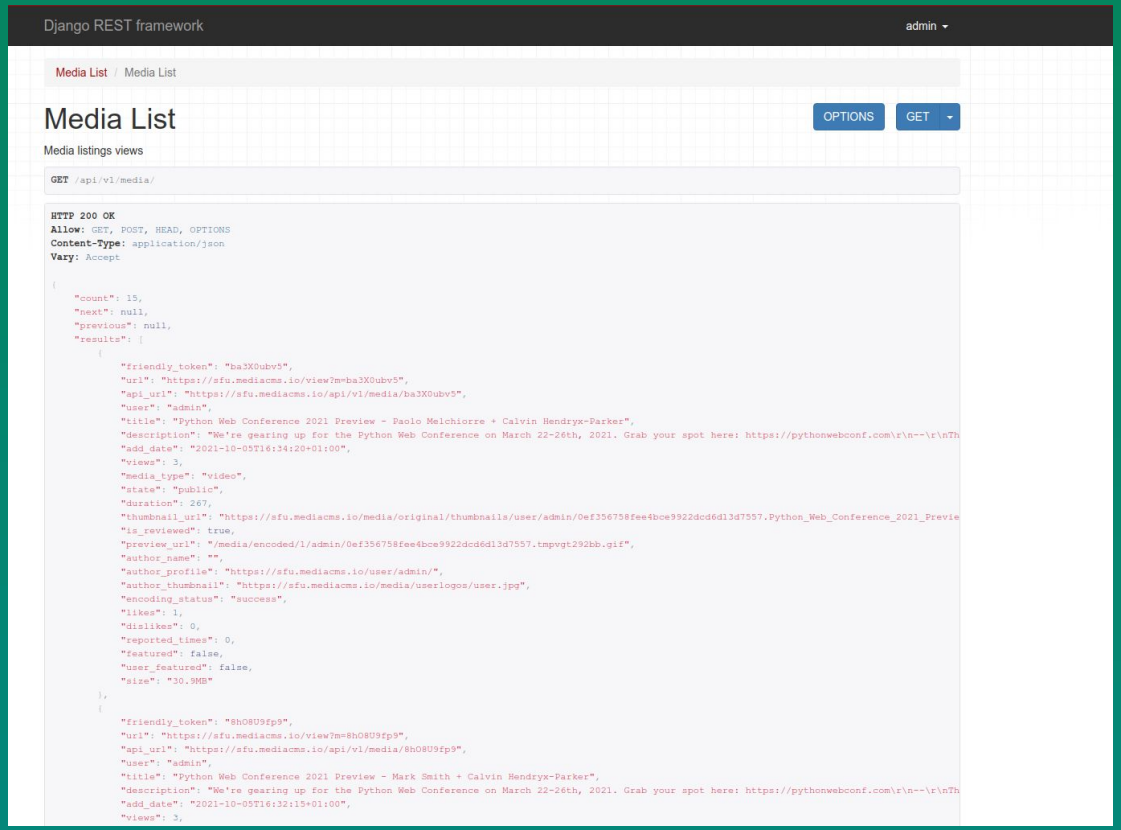
- recommendations
  - based on simple heuristics as same category/tag
  - configurable options (eg same author only)
  - collaborative filtering based
    - experimentation with word2vec and other ML models for

Swagger (Django drf-yasg)



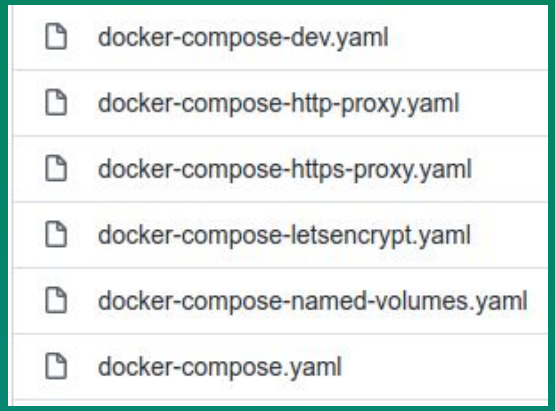
https://mediacms.io

Rest API



https://mediacms.io

Dockerized setup, pre-commit, github actions




```yaml
repos:
  - repo: https://gitlab.com/pycqa/flake8
    rev: 3.7.9
    hooks:
      - id: flake8
  - repo: https://github.com/pycqa/isort
    rev: 5.5.4
    hooks:
      - id: isort
        args: ["--profile", "black"]
  - repo: https://github.com/psf/black
    rev: 20.8b1
    hooks:
      - id: black
        language_version: python3
```

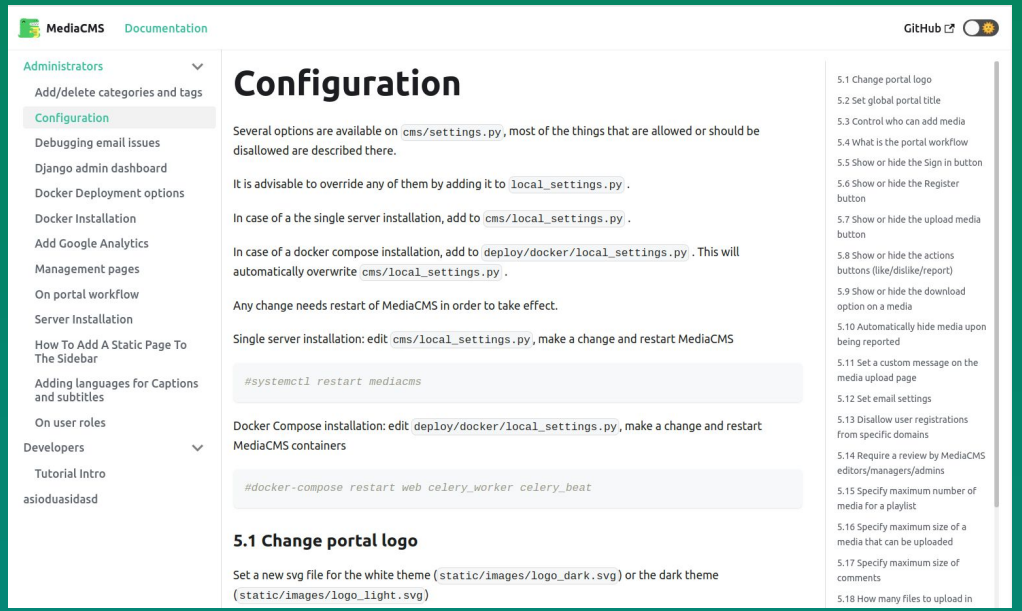
```yaml
- name: Run Django Tests
  run: docker-compose -f docker-compose-dev.yaml exec --env TESTING=True -T web pytest

- name: Tear down the Stack
  run:  docker-compose -f docker-compose-dev.yaml down
```

Documentation

Administrators documentation

Table of contents

- 1. Welcome
- 2. Server Installaton
- 3. Docker Installation
- 4. Docker Deployement options
- 5. Configuration
- 6. Manage pages
- 7. Django admin dashboard
- 8. On portal workflow
- 9. On user roles
- 10. Adding languages for Captions and subtitles
- 11. Add/delete categories and tags
- 12. Video transcoding
- 13. How To Add A Static Page To The Sidebar
- 14. Add Google Analytics
- 15. Debugging email issues



Docusaurus

https://mediacms.io

Blog

MediaCMS.io 4 Followers Lists About

MediaCMS

MediaCMS.io

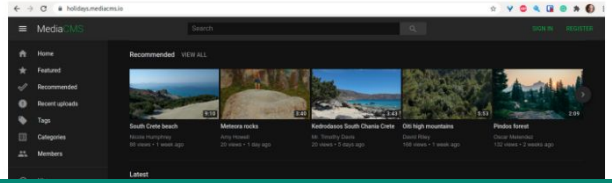
MediaCMS is a modern, fully featured open source video and media CMS — https://mediacms.io

Aug 21

How to self-host and share your videos in 2021

Introduction

In this article, we will show how you can use open-source MediaCMS software to build a video portal in a few minutes that will allow users to upload their videos, categorize and tag them and make them available for streaming.



https://mediacms.io

Future dev

- Software internalization - add translations
- Block storage support (S3, Azure etc)
- live streaming
- subscriptions, payments
- analytics
- Provide great documentation - good way to get adoption

Future dev

- automatic categorization on images (based on CV)
- Software internalization - add translations
- Migrate content from Youtube and other platforms
- Extend notifications (upon all actions)
- Admin dashboards (eg tasks running)
- Encoding services integration (mux, AWS Elastic Transcoder)

Live demo

https://mediacms.io

How to contribute

- backend/frontend engineering tasks
  - pick up any open ticket on the github repository
  - bring new functionality

How to contribute

- devops tasks
  - evaluate and optimize docker setup
  - stress test
  - help run on an number of environments
    - Pass, eg Heroku
    - Cloud, eg AWS/DigitalOcean
    - Kubernetes

How to contribute

- Technical writing
  - run a post/blog post/article
  - participate on discussions/issues

- UI/UX/design
  - prepare a logo
  - improve aesthetics

How to contribute

- Anyone
  - use the software
  - suggest project to organizations/others
  - star on Github / mention on social media

Questions

- https://github.com/mediacms-io/mediacms
- mgogoulos @ gmail.com