Emerging Scholarly Practice and Scholarly Primitives: a Case Study in Music and AI

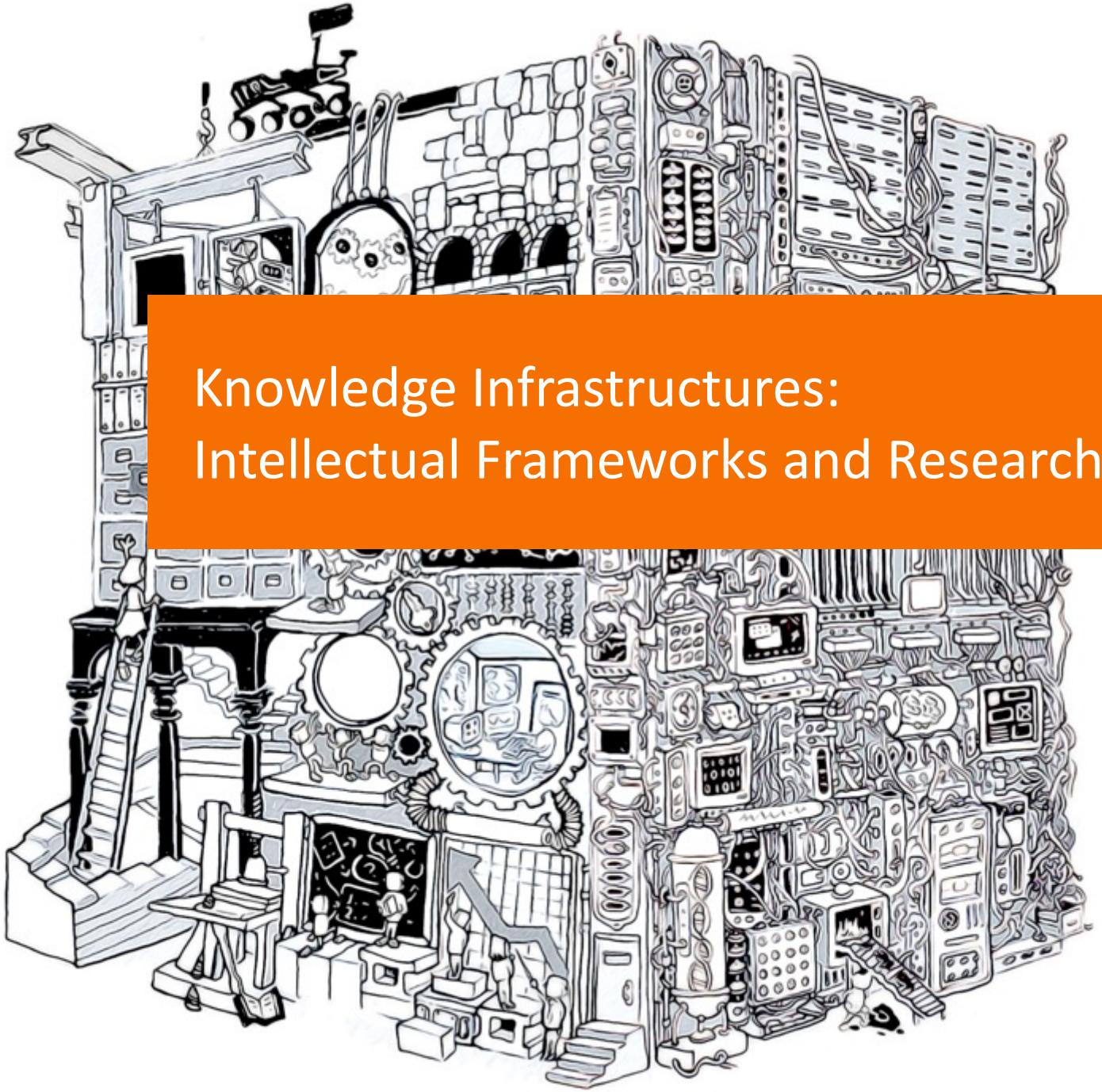
David De Roure

The story of the talk

Our knowledge infrastructure has evolved to support digital scholarship, as we adopt new methods which realise the affordances of the digital – including computation, but also socio-technical engagement at scale.

The digital musicology community has been “an early adopter”, establishing new research practices which illuminate possible futures in other fields.

Today we see the music community increasingly adopting artificial intelligence techniques in both analysis and composition, and a growing symbiosis of human and machine.



Knowledge Infrastructures: Intellectual Frameworks and Research Challenges

Edwards, P. N., et al. (2013) Knowledge Infrastructures: Intellectual Frameworks and Research Challenges. Ann Arbor: Deep Blue. http://hdl.handle.net/2027.42/97552

https://jakefagan.myportfolio.com/knowledge-infrastructures-sketch-development

Social Machines

"Real life is and must be full of all kinds of social constraint – the very processes from which society arises. Computers can help if we use them to create **abstract social machines on the Web: processes in which the people do the creative work and the machine does the administration...** The stage is set for an evolutionary growth of new social engines. **The ability to create new forms of social process would be given to the world at large, and development would be rapid.**"

Berners-Lee, *Weaving the Web*, 1999 (pp. 172–175)

Crowdsourcing:
Social Machines (meet AI)

Example: What's the Score in the Bodleian?

The principal aim of the project is to investigate a cost-effective approach to increasing access to music scores from the Bodleian's collections, to be achieved by a combination of rapid digitization and the creation of descriptive metadata through crowd-sourcing. A recent pilot study concluded that traditional retrospective cataloguing of the music collections would require extensive funding and would take many years to achieve, and it is intended that the methodology and outcomes of this project should be used to inform a more economical approach to creating access to other material in the Bodleian.

The approach will be two-fold: firstly to undertake all procedures associated with the online delivery of digital surrogates for a proposed selection of material (to include basic descriptive metadata, conservation, tracking, delivery platform and preservation); and secondly to create an environment which allows for, and encourages, the enhancement of the basic metadata through crowd-sourcing and additional features such as Music OCR and online performances.

GALAXY ZOO .org

Welcome to **GalaxyZoo** , the project which harnesses the power of the internet - and your brain - to classify a million galaxies. By taking part, you'll not only be contributing to scientific research, but you'll view parts of the Universe that literally no-one has ever seen before and get a sense of the glorious diversity of galaxies that pepper the sky.

Why do we need you?

The simple answer is that the human brain is much better at recognising patterns than a computer can ever be. Any computer program we write to sort our galaxies into categories would do a reasonable job, but it would also inevitably throw out the unusual, the weird and the wonderful. To rescue these interesting systems which have a story to tell, we need you.

GZ is now live! Go ahead and sign up to start classifying galaxies right away.

https://web.archive.org/web/20070716071553/http://www.galaxyzoo.org/

April 14, 2009

by The Zooniverse

in Site News

27 Comments

The First Volunteer-inspired Galaxy Zoo Paper is Submitted!

At long last the 'Peas' have been submitted to MNRAS (The Monthly Notices of the Royal Astronomical Society,). The 'Peas' were discovered by users right here in Galaxy Zoo who noticed a strange class of small green galaxies at redshifts near z=0.2. A dedicated group of volunteered collected a sample of these galaxies. Then Kevin Schawinski found an astronomer (Carie [me :)]) to pull them together and look at them in detail.

https://blog.galaxyzoo.org/2009/04/14/the-first-volunteer-inspired-galaxy-zoo-paper-is-submitted/

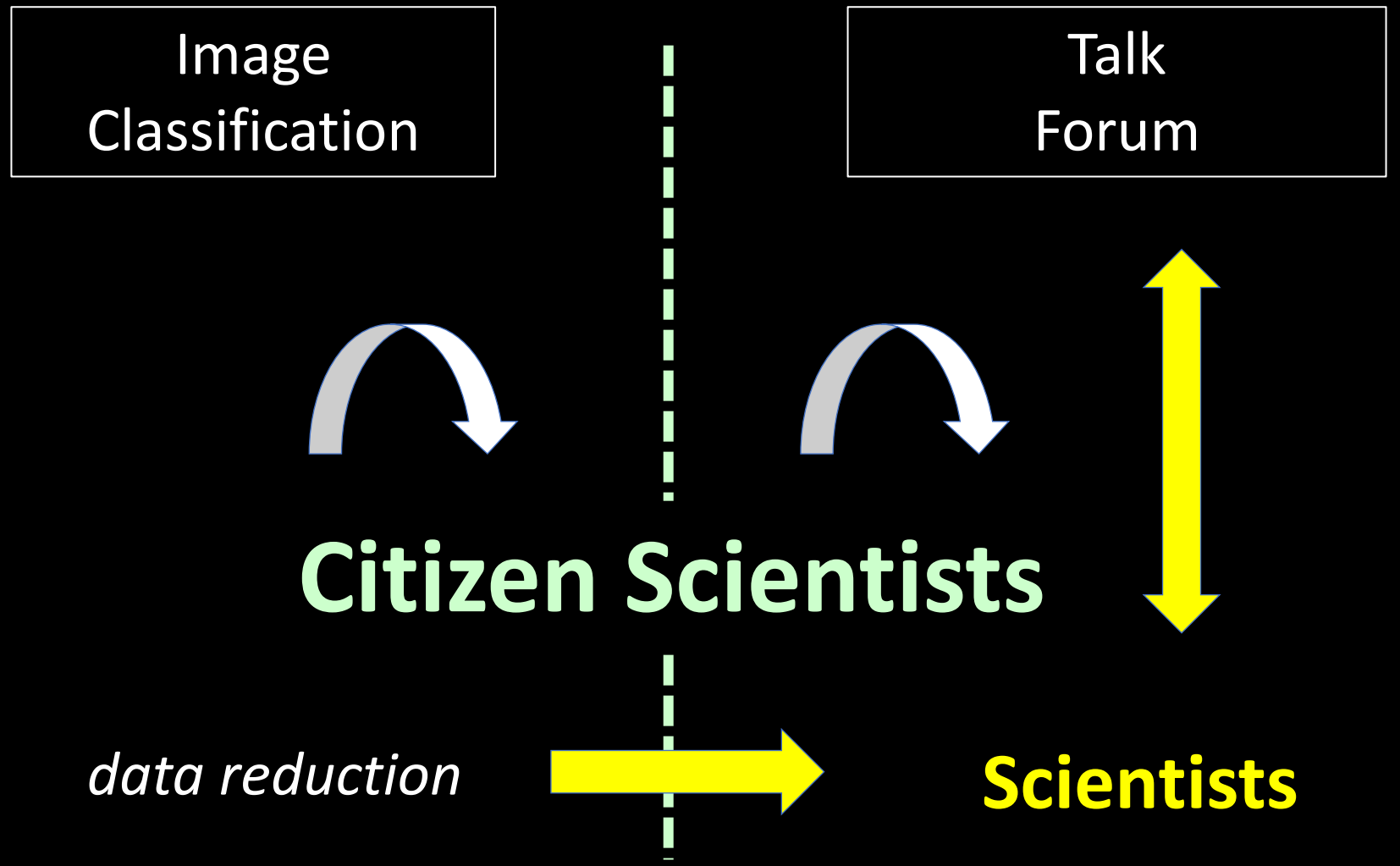
BLOGROLL

Galaxy Zoo

SEARCH

RECENT POSTS

Stronger bars help shut down star formation



Galaxy Zoo launched in July 2007 and engaged 165,000 volunteers

WILDWATCH KENYA
WEDDELL SEAL COUNT
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COLORADO CORRIDORS PROJECT
NOTES FROM NATURE - NYBG
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WESTERN MONTANA WILDLIFE
BASH THE BUG
ETCH A CELL
EXOPLANET EXP
FOSSIL ATMOSPHERES
GALAXY NURSERIES
SUPERNOVA SIGH
AMAZONCAM TAMBOPATA
MUON HUNTER
BACKYARD WO PLANET
THE ZOONIVERSE WORKS
628,238,393
CLASSIFICATIONS SO FAR BY
2,375,723 REGISTERED VOLUNTEERS
BRAIN MATCH
SOLAR STORMWATCH II
PLANETARY RESP NETWORK & RE
HUBBLE'S HOT STARS
SNOW SPOTTER
TOLEDO ZOO WIL
LEAF TARGETING
STEELPAN VIBRATIONS
SCRIBES OF THE CAIRO GENIZA
MUTUAL MUSES
CRIMINAL CHARACTERS
WORLDS OF WONDER
AFRICAN AMERICAN CIVIL WAR SOLDIERS
FOCUS ON WILDLIFE -- CLEVELAND METROPARKS
CHICAGO WILDLIFE WATCH
ARIZONA BATWATCH
GRAVITY S
ELEPHANT EXPEDITION
SERENGETI WILDEBEEST COUNT
MICHIGAN ZOOMIN
THE PLASTIC TIDE
GALAXY ZOO: CLUMP SCOUT
GALAXY ZOO MOBILE
EUCLID - CHALLENGE THE MACHINES
MAPPING CHANGE
MILKY WAY PROJECT
RADIO METEOR ZOO
CAMERA CATA

AGENTS OF ENSLAVEMENT

CITIZEN ASAS-SN

PROJECT RATTLECAM

ETCH A CELL - ER

SCROLL DOWN FOR EVEN MORE

ALL DISCIPLINES | ARTS | BIOLOGY | CLIMATE | HISTORY | LANGUAGE | LITERATURE | MEDICINE | NAT

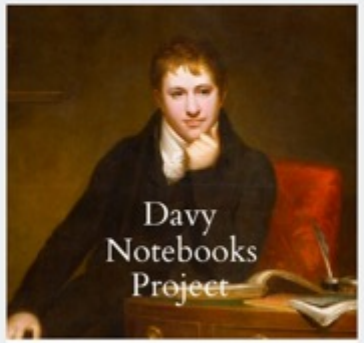
Most Recently Launched

Showing 1-5 of 5 projects found.

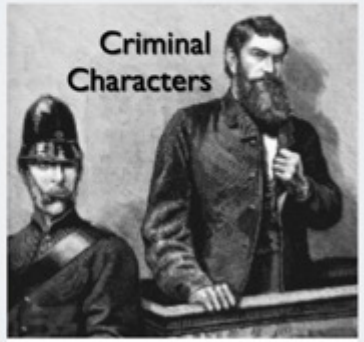
Name:

TAG ALONG WITH ADLER

WORLD ARCHITECTURE UNLOCKED



DAVY NOTEBOOKS PROJECT



CRIMINAL CHARACTERS

SCRIBES OF THE CAIRO GENIZA

Galaxy Zoo

ABOUT CLASSIFY TALK COLLECT

Few have witnessed what you're about to see

In an effort to speed up classifications to cope with the large number of galaxies we expect to receive from new surveys, we've been working on ways to combine your classifications with those of machines, inspired by the idea that the combination of both automatic and human classification may be more powerful than either alone. If you choose the 'Enhanced' work flow, you will be much more likely to see the top 100 galaxies our galaxy-classifying robot thinks it needs help with in order to improve. All galaxies will be seen by at least a few volunteers to make sure we aren't missing anything. If you'd rather just see a random selection of available galaxies, choose 'Classic'.

SALAMI

23,000 hours of recorded music

Digital Music Collections

INTERNET ARCHIVE

Music Information Retrieval Community

CIR MMT

Student-sourced ground truth

Community Software

imirsel

Supercomputer

mirex

Linked Data Repositories

OXFORD e-Research CENTRE

```
0.000000000     silence
0.429569160     C, c, intro
4.109931972     A, a, verse, (vocal
7.783401360     b
15.153628117    a
18.890045351    b'
26.284988662    B, d, chorus
33.523809523    e
40.857528344    A, a, verse
44.563242630    b
52.006893424    a
55.805986394    b'
63.245351473    B, d, chorus
70.530612244    e
77.929659863    A, a, verse
81.653061224    b
89.042721088    a
92.834535147    b'
100.327619047   B, d, chorus
107.647709750   e
114.956190476   B, d, chorus
122.258730158   e
129.544126984   e, vocal), outro
136.434648526   silence
139.334648526   end
```

WTS

ABOUT CLASSIFY TALK COLLECT RECENTS LAB

TASK TUTORIAL

Your classification:

Who is the composer?
"Charles d'Albert"

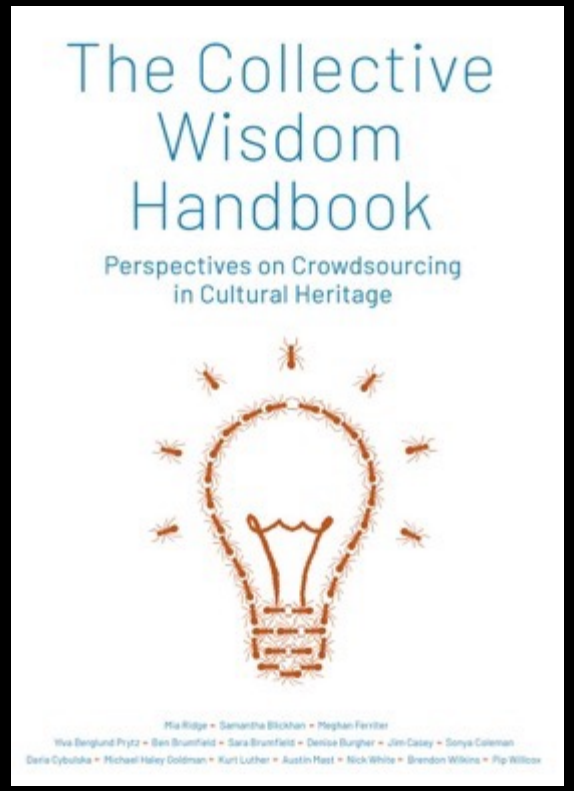
What's the title?
"The Cleopatra Galop"

Talk Next →

PROJECT #17126

View project

- Project details
- About
- Collaborators
- Field guide
- Tutorial
- Media
- Visibility
- Talk
- Data Exports
- **Workflows**
- Subject Sets



Community partnership ethics

- Take a human-centered approach
- Respect all project members
- Acknowledge and honor contributions
- Build and sustain trust
- Protect participant privacy as a default, and certainly when requested[3]
- Never waste participants' time
- Remember that participation in online projects can have real-world effects

https://britishlibrary.pubpub.org/the-collective-wisdom-handbook-perspectives-on-crowdsourcing-in-cultural-heritage---community-review-version