Building the Zooniverse into Your Pipeline

Adam McMaster, August 22, 2019
Hot-Wiring the Transient Universe
Building a Zooniverse Project
How to build a Zooniverse project
The Zooniverse API
Panoptes API

- github.com/zooniverse/Panoptes
- panoptes.docs.apiary.io
- developer.zooniverse.org
- github.com/zooniverse/panoptes-python-client

pip install panoptes-client
Why Python?
Python is great!
Why Python

- Easy to do web stuff with the `requests` module
- Popular among scientific users (especially in astro)
- Good scientific modules (`numpy`, `astropy`, `Pandas`, `yt`)
- Easy to learn for new users
from panoptes_client import Panoptes, Subject, SubjectSet

Panoptes.connect(...)

uploaded_subjects = []

with Subject.async_saves():
    local_files = [...]
    for filename in local_files:
        s = Subject()
        s.links.project = 1234
        s.add_location(filename)
        s.save()
        uploaded_subjects.append(s)

subject_set = SubjectSet.find(1234)
subject_set.add(uploaded_subjects)

Uploading subjects in Python with the Panoptes Client
Supernova Hunters: images from Pan-STARRS are uploaded automatically once per week
Caesar: How we talk to your API
Do you spot a transit? If so, please mark it on the light curve to the left!

If you don’t see any transits, continue by clicking Done or Done & Talk.

NEED SOME HELP WITH THIS TASK?

- Transit?
- Done & Talk
- Done

Finished for the day?
Your answers are saved for the research team while you’re working. See the project stats and return to the Planet Hunters TESS home page.

Planet Hunters TESS: uses Caesar to send results to MAST
How you could use the Zooniverse

- Active learning – send us examples your classifier is unsure of, let us notify you when humans reach a consensus (we're doing this with Galaxy Zoo)
- Manual classification of transients – Get quick human classifications, especially for edge cases/unusual objects
- More?
Zooniverse + LSST

- Test projects sought to operate during LSST commissioning (using ComCam data)
- For transient projects, we’re assuming Zooniverse will consume output from public brokers and help classify outliers
- During operations: We’ve made it easy for users of the LSST system to quickly move data from the main science interface to Zooniverse
- Projects will be promoted by the LSST Education & Public Outreach team and website.
Thank you!

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