Amazing things in open source

3rd-party Python package ecosystems

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About me

- Python volunteer work: Django Packages/ OpenComparison co-BDFL, PyLadies co-organizer
- Entrepreneur: co-founder of Whitespace Jobs
- Django consultant: Cartwheel Web & Revsys
- Fiancee of Daniel Greenfeld (@pydanny)

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Overview

- Python community is a meritocracy
- Python ecosystem patterns
- 3rd-party packages: Quantity & quality
- Community-building

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Meritocracy

If your work has merit, people use it

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We are a meritocracy

- Python open-source community is a meritocracy
  - Anyone can build anything
  - Anyone can start a user group
  - Anyone can be a leader
    - ...as long as they put in the work

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No permission needed

- Just implement or experiment with what you want
- The more useful or helpful your work is, the more you succeed
- (A few exceptions)

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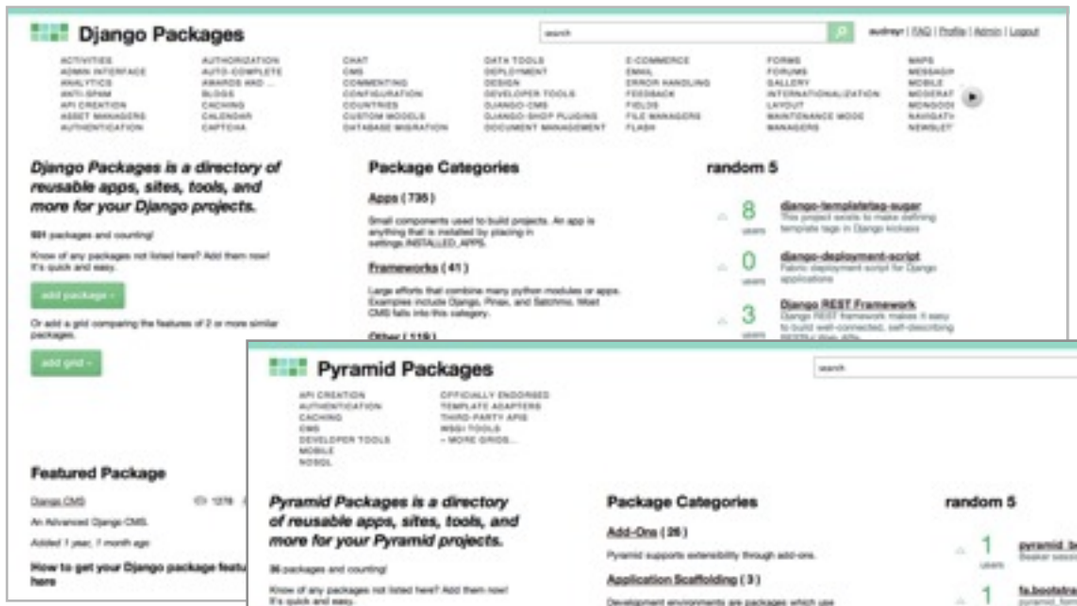
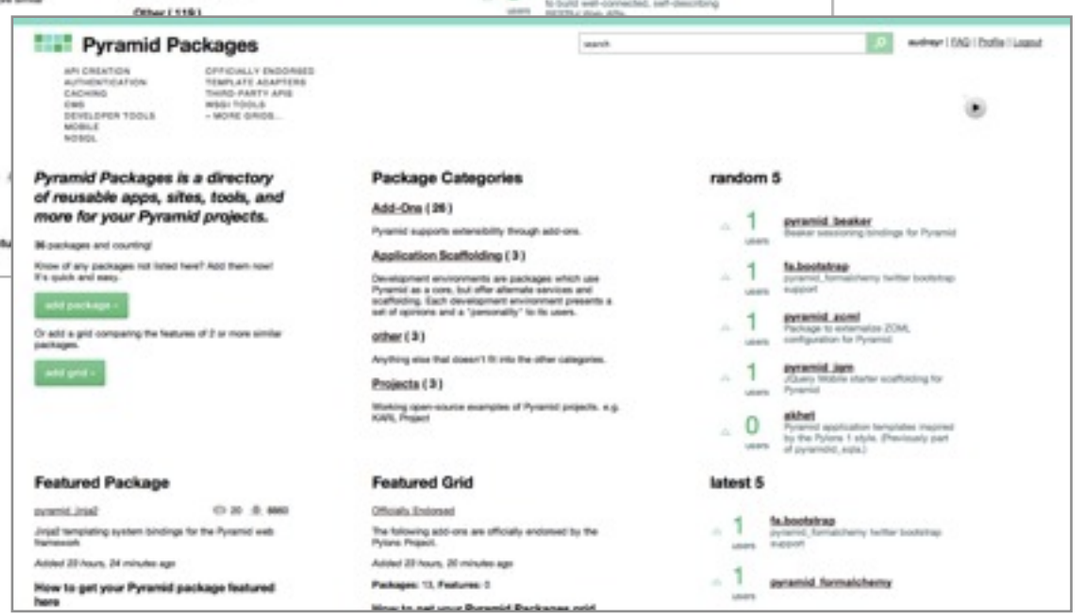
It's fun

- Rewarding to see others using your work





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Meritocracies are about what you actually do

- Call to action: Build whatever you desire/need
- Don’t worry about politics. Just be nice
- If you don’t build X, no one will
- **You** can solve your own problems

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Who's in charge?

If you're doing the coding, you're in charge*. So make the decisions that you want.

*when it's your own project or 3rd-party Python package

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Early decisions for djangopackages.com

- Forced to make quick decisions during Django Dash
- All packages are added manually, using:
  - package name
  - PyPI URL
  - repo URL

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Decisions, decisions

- No automatic package-finding spiders, by design.
- Was it a good decision?
  - Who knows, doesn't matter
- Currently 900+ packages

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Decisions, decisions

- Sometimes you just have to pick something
- As opposed to asking a mailing list and having X get debated for 2 weeks
  - Mailing lists can be useful, but be careful

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The Future is in Your Hands

(or is it?)

- Future of your Python project: In your hands/in the hands of your core dev team
- or...
- Future of your Python project: Decided by other people on a mailing list

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Your Gut Instinct Is Often Right

- Fun fact: many of the grid items/descriptions on Django Packages come from “throwaway” fixtures that I created in a rush
- Don’t like them? You have edit permissions ;)

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Ecosystem Patterns

Add-ons, plugins, contrib, core size, etc.
What makes a Python project or framework grow?

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Why I Use Mostly Django These Days

- Many 3rd-party packages
  - Candy store
  - Bucket of Legos
- Not having to write everything myself is fun

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Why I Use Mostly Django These Days

- (also, I'm just used to it)

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Django Core vs. Apps

- Many, many batteries included
  - Gives you one obvious way to do things
- Third-party apps: “Django packages”
- Good and bad

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Django's Reusable App Structure

- What an app looks like

```
houses/
    __init__.py
    models.py
    views.py
    urls.py
    tests.py
templates/houses/
    house_list.html
    house_detail.html
```

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Installing Django Apps

- How to install an app

```
# settings.py
INSTALLED_APPS += (‘houses’)
YOUR_CUSTOM_SETTING = ‘your value’

# urls.py
url(r’^houses/’, include(‘houses.urls’)),
```

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Django's Ecosystem Over Time

- More and more new innovations implemented as 3rd-party packages.
    - The best innovations get added to core

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Observation

- Ecosystems grow fastest when end-users can write packages
- Look at jQuery plugins
- Look at PyPI
- Look at CPAN

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Pyramid Core vs. Add-Ons

- Smaller core, more add-ons
- Anyone can write add-ons
- Some add-ons are “officially endorsed”
- Still young, but potential for rapid growth

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Pyramid's Ecosystem Over Time

- Past: Pylons, Repoze.BFG, Turbogears
- Present: Core-like functionality implemented as add-ons.
  - Few but growing # of add-ons
- Future: Lots of add-ons. Old add-ons easily deprecated for new replacement add-ons.

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Checklist: What 3rd-Party Package Devs Need

- "Best practices" doc on how to write 3rd party packages
- Well-defined, easy-to-understand spec
- Sample code (as much as possible)
- Active community

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Checklist: What Every Micro-Community Needs

- Mailing list for announcements/questions
- IRC channel
- Docs, tutorials, sample projects
- Spec or “Best practices” doc for package authors.
- Add-on, plugin, or other 3rd-party package system
- Actively-updated 3rd-party package catalog

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Too many options?

Dealing with a (not always) happy problem

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The One True Way?

- The Zen of Python says: " There should be one-- and preferably only one --obvious way to do it."
  - This is about Python language constructs

- Not applicable to 3rd-party packages
  - e.g. okay to have multiple web frameworks

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Too Much Clutter

Can't find the right package?

- What if 2 packages have the same purpose?
- Differences should be documented
  - Within the package docs
  - In a catalog
- Deprecate bad packages

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Too Much Fragmentation?

- So many Python micro-communities
- Web frameworks with their own user bases
- SciPy, PyGame, wxPython, etc.

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Too Much Fragmentation?

- You can never have too many Python interest groups
  - Diversity of ideas
  - More communities == more Python developers
- Share as much code as possible

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3rd Party Package Quality

Patterns and Anti-Patterns

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What Makes a Python Package Useful?

- Solving problems elegantly, clearly, efficiently
  - Does one thing well
- Usability: thorough docs, pip install from PyPI
- Reliability: tests, support

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Package Anti-Patterns Are Viral

- Don’t underestimate the influence of your patterns
- When there is no best practice, people find the anti-pattern code samples

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Package Anti-Pattern: Not Packaging

- Releasing snippets instead of packages
- Heavy reliance on copying and pasting snippets
  - project-to-project
  - from old blog posts
  - snippet directories

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Package Anti-Pattern: Not Packaging

- But there are exceptions to this!
  - Don't over-engineer to be pluggable

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Package Anti-Pattern: Not Packaging

- Tricks that you have to be “in the know” to understand

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Package Anti-Pattern: Too Much Functionality

- Kitchen-sink base platforms
- Utility, do-everything packages
- Duct-tape packages to correct a large variety of unrelated problems

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Package Pattern: Be Pythonic

- Why do we love Python?
  - Elegance
  - Ease of use
  - Explicitness, clarity
  - Simplicity

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Community-building

Groups, leaders, and diversity of ideas

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Mentorship

- Today's new users are tomorrow's contributors & leaders
- Mentorship groups: Positive encouragement
  - PyLadies
  - Python Core Mentorship
  - (need more like this)

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Diversity of Ideas

- Look at schedules & slides from PyCons & PUGs around the world
- Ideas differ country-to-country
- Same goes for other types of diversity besides geographic
  - LA PyLadies is very different from SoCal Python Interest Group & LA Django

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Summary

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Summary

- Build what you want
- Encourage a community of 3rd-party package developers
- Be helpful

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Thank you

- Twitter: @audreyr
- Find me in IRC - #pyladies, others

- By the way: