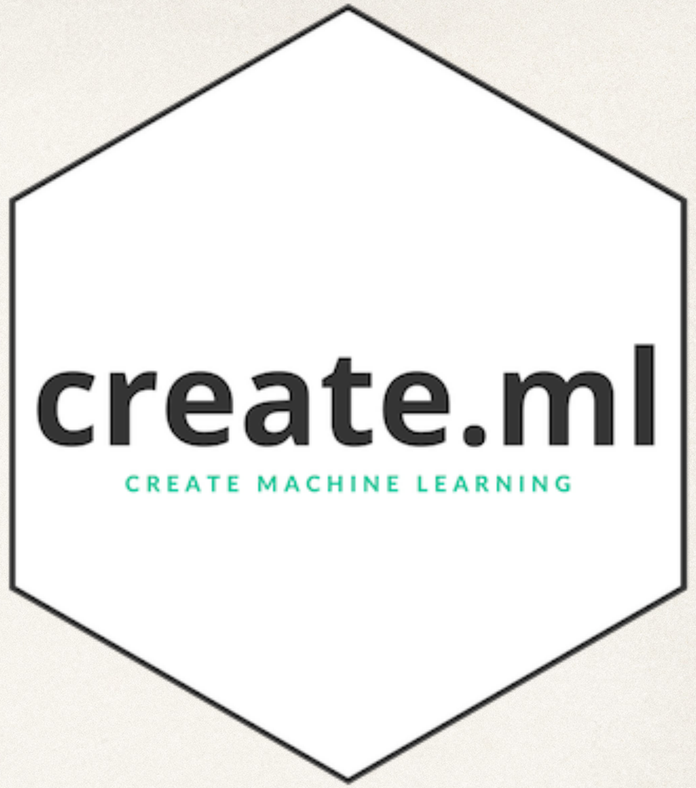
OPEN DATA SCIENCE CONFERENCE

London | Nov. 19 - Nov. 22 2019



Make Beautiful Web Apps from Jupyter Notebooks

Michal Mucha

11/20/2019

@jeremimucha | https://create.ml

Welcome!

- Have you done the preparation? :)
- Connect & collaborate with those around you!

wikipedia.org

Requirements

- Anaconda 3
- `pip install -r requirements.txt`

- You can access the notebooks through Binder
- https://create.ml/odsc2019

What makes Jupyter so great?

- Visual
- Beautiful
- Interactive, rich with media
- Ability to inspect what’s going on at every step
- Data-driven storytelling
- Infinite freedom of coding

How do you deliver your work?

- Packaged code
- Notebooks
- Scripts
- Reports
- Documents
- Presentations
- Spreadsheets
- Apps

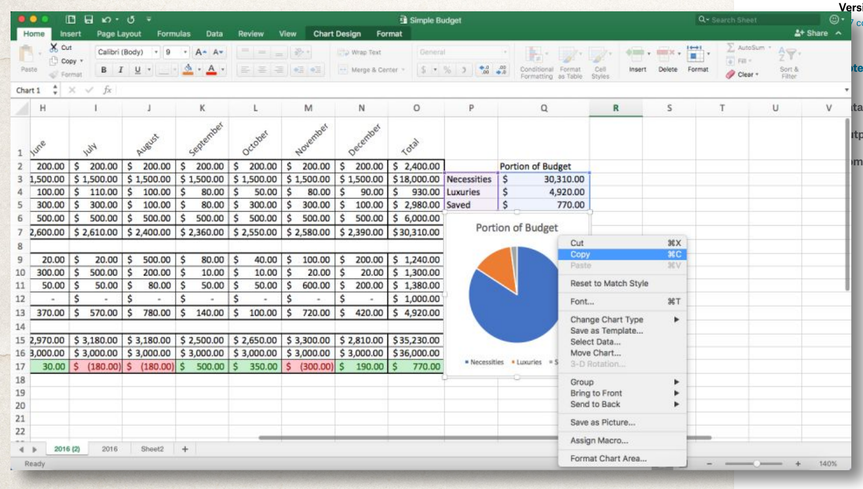
Is your deliverable final?
Or is it part of a development process?

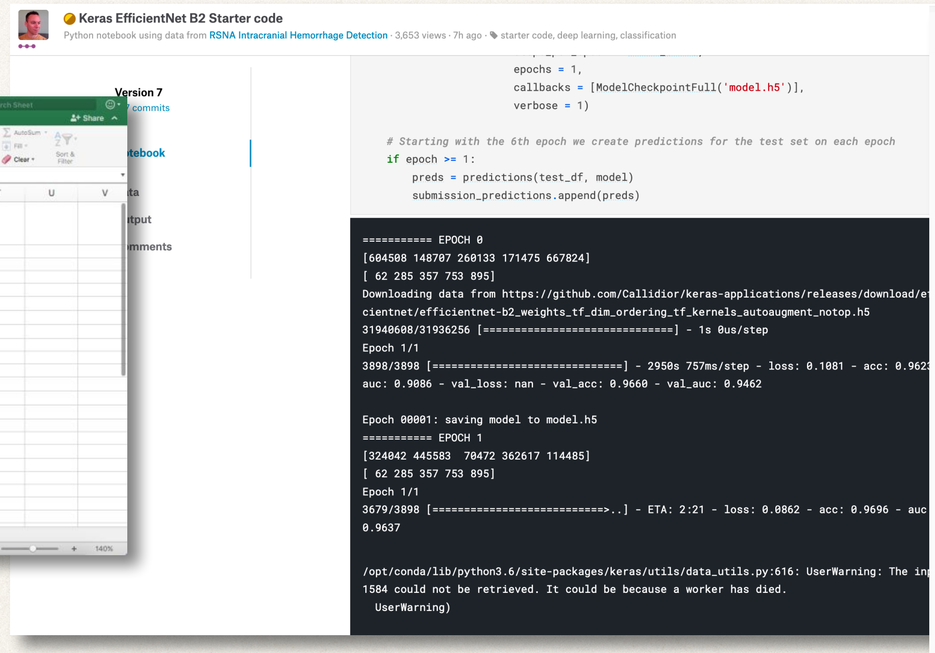
Cognitive load
Is it easy to understand the meaning?

- Spreadsheets
- PDFs
- Presentations
- Code + outputs
- … Slick web apps? :)

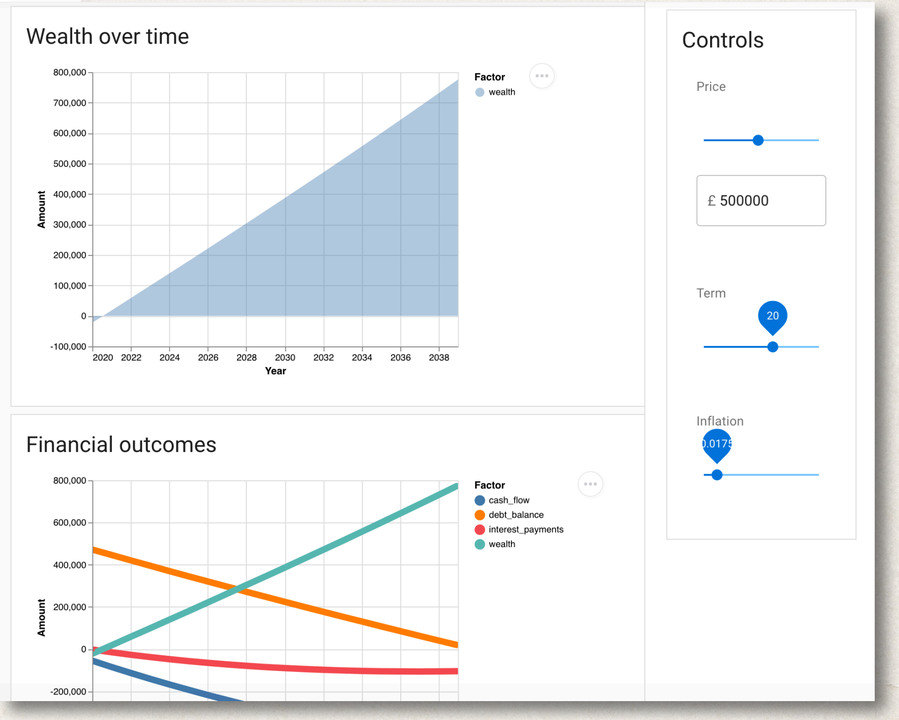
Examples

Good old
MS Excel





Web app
rendered from a notebook



Code and results
Documents

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Knowledge sharing as a business process

- Make your work more engaging to your audience
- Change the way people think by giving them an opportunity to interact
- Spread the maker culture - emphasize doing

About me

- Data Science and Data Engineering - consulting and training
- Academic research (mobile phone data, smart meter data)
- Commercial projects (time series prediction, decision simulation, revenue modeling, visualization, building apps, data strategy)
- Husband and dad
- ❤️ boxing, cycling, hiking in the mountains ⛰️ and traveling

Lab

- Real decision, real stakeholders
- Complicated set of influences
- Multiple outcomes

- Let’s go:
  - create.ml/odsc2019
  - open the notebook titled “Typical workflow”

Ok that’s great, but…
How can others use it without you?

- Well, get good at working in Python..
- Ask a team to build it..

- Not too easy! Even though it’s in the browser
- Export to the usual suspects

Making ideas accessible

- The easier it is, the more it gets used
- The simpler it is, the more room for deep thought
- Attention is a precious resource

Recap - Pinnacle

- Proactive, curious state of mind
- Attractive interface
- Low cognitive expense
- Focus on the right set of questions

Craft experiences

- Build apps to create experiences of understanding
- You need great tools to do it quickly and consistently

A great year for visualization

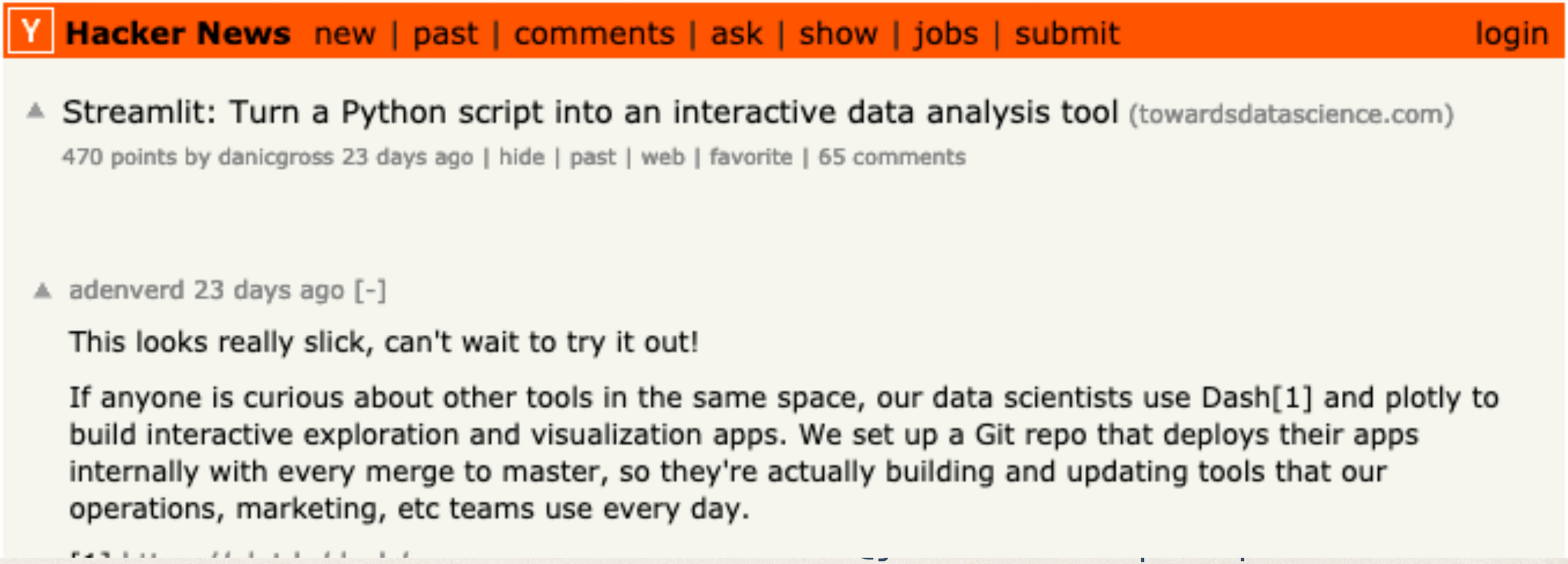
- Panel – June 3rd .. or before!
- Voila – June 11th
- Streamlit – October 1st
- Other great active projects: Dash, Bokeh

- Very luxurious condition:
- tomato tomahto, all organic and delicious!

Shout out to Voila authors
Thank you!

- quantstack.net
- @maartenbreddels

Stories from the field



Y **Hacker News** new | past | comments | ask | show | jobs | submit login

▲ Streamlit: Turn a Python script into an interactive data analysis tool (towardsdatascience.com)

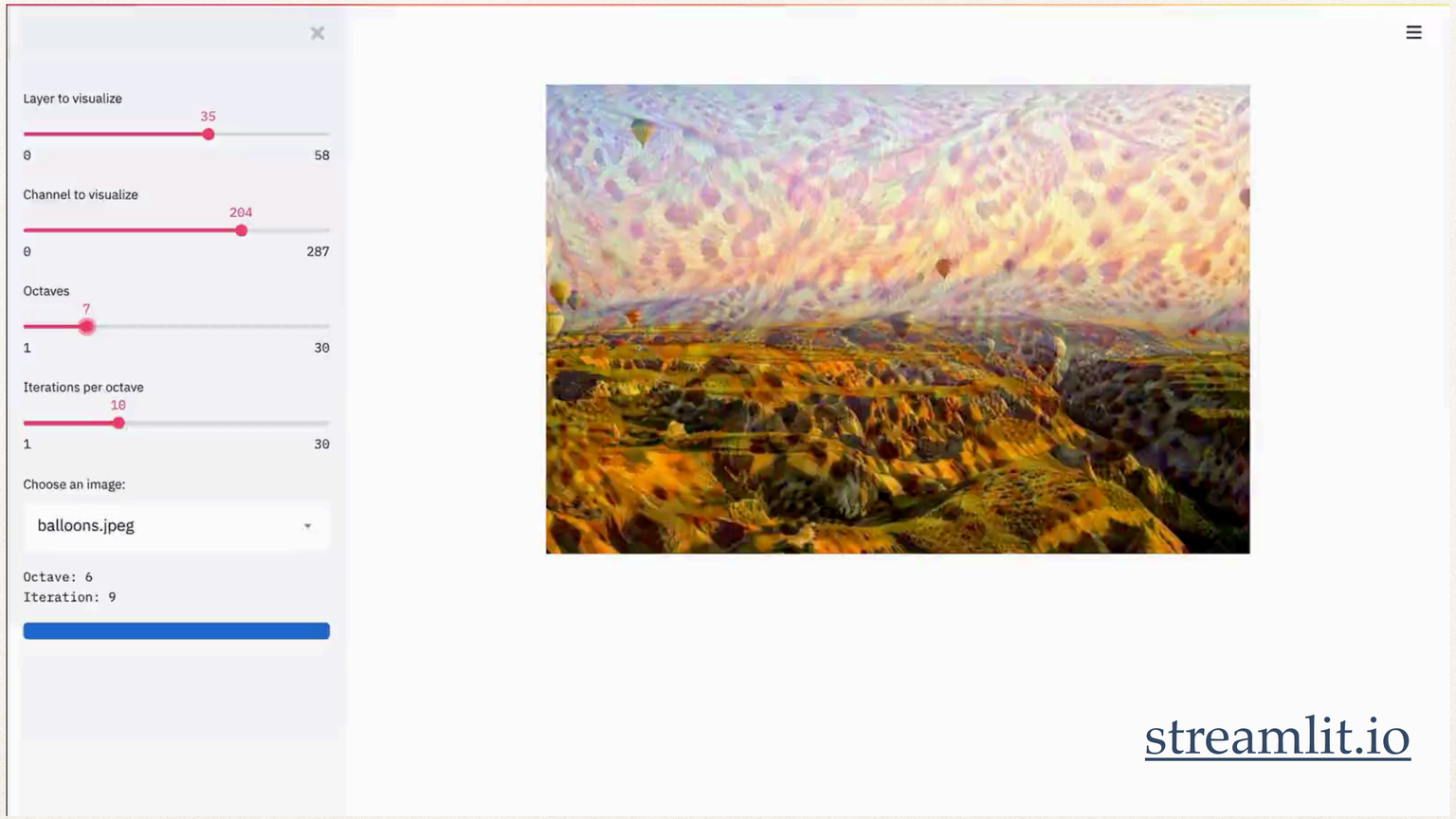
470 points by danicgross 23 days ago | hide | past | web | favorite | 65 comments

▲ adenverd 23 days ago [-]

This looks really slick, can't wait to try it out!

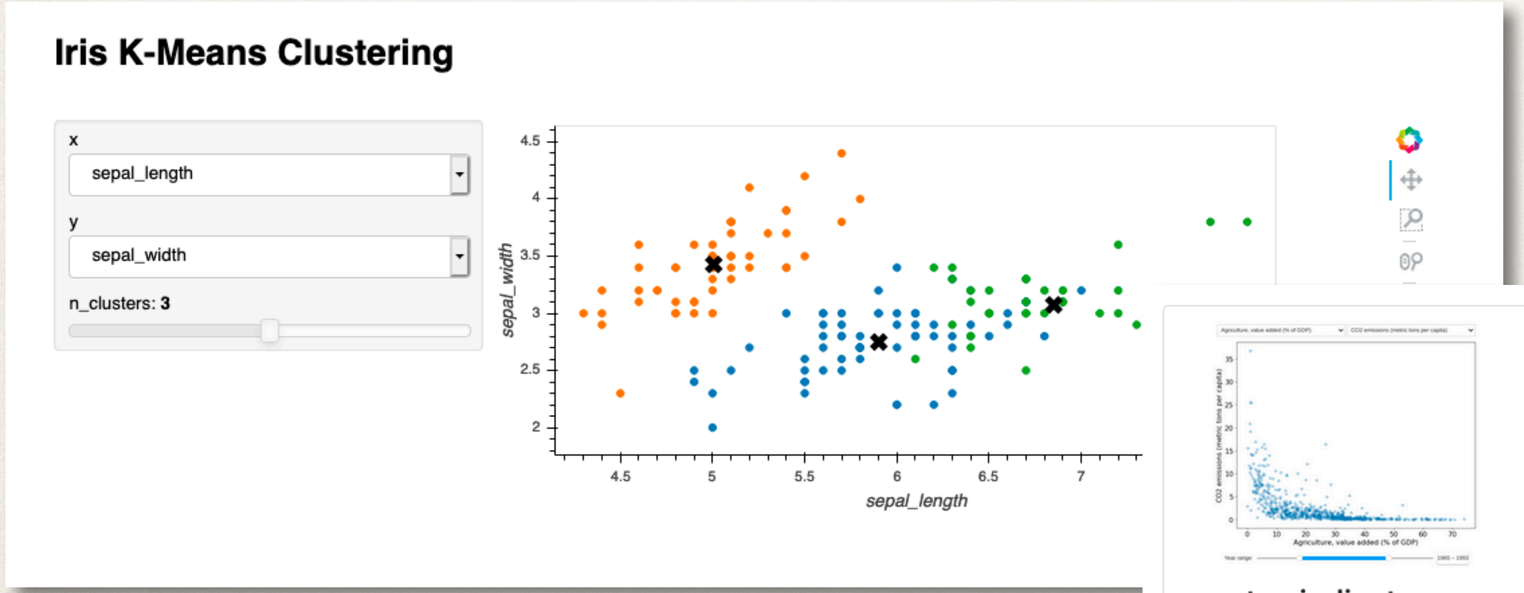
If anyone is curious about other tools in the same space, our data scientists use Dash[1] and plotly to build interactive exploration and visualization apps. We set up a Git repo that deploys their apps internally with every merge to master, so they're actually building and updating tools that our operations, marketing, etc teams use every day.

Panel, Streamlit & Dash serve scripts



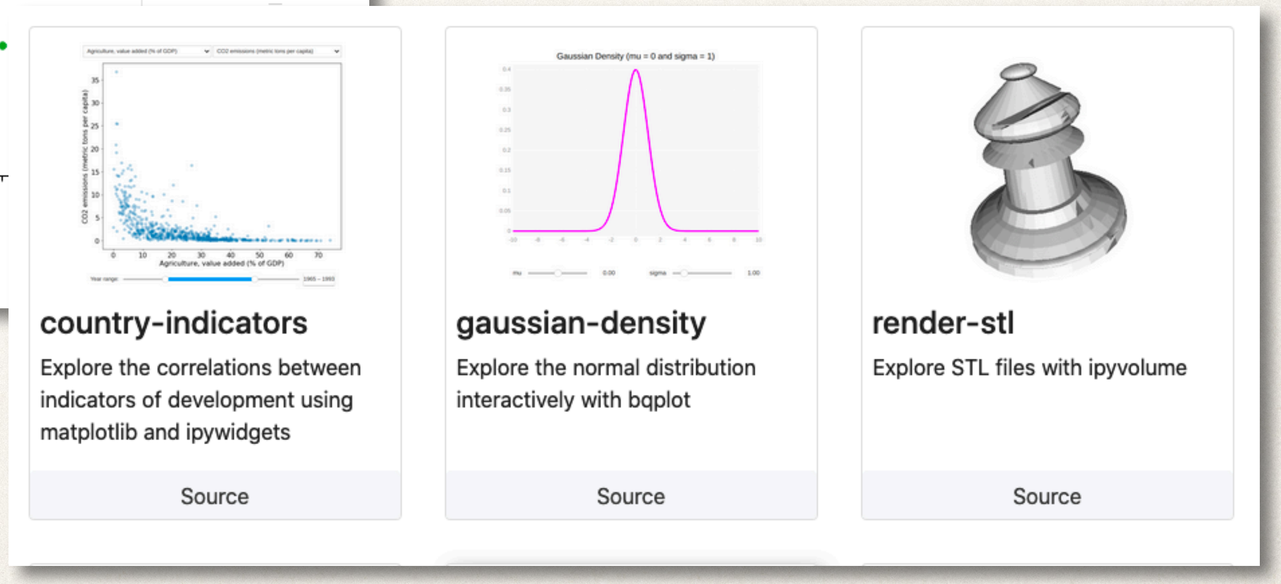
streamlit.io

Panel & Voila - serve notebooks



panel.pyviz.org

voila-gallery.org



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Lab - let’s make a pretty app

- create.ml/odsc2019
- open the notebook titled “Web app”

Resources & Credits

- https://github.com/voila-dashboards/voila
- https://voila-gallery.org/
- https://vuetifyjs.com/en/components/api-explorer
- https://github.com/mariobuikhuizen/ipyvuetify/
- https://streamlit.io/
- https://panel.pyviz.org/
- https://altair-viz.github.io/
- https://bokeh.org/
- https://dash-gallery.plotly.host/Portal/

Recap - benefits

- Knowledge sharing & preservation in the organization
- Building relationships between teams
- Getting internal buy-in
- POCs in hours
- Data people successfully going free solo and shipping tools
- Focus on core work - sharing is seamless

Share your work

- Pick your favorite framework and build an app!
- Tell the community what you built
- Let’s stay in touch -> message me!
- Go to create.ml/thankyou
  and leave feedback :)