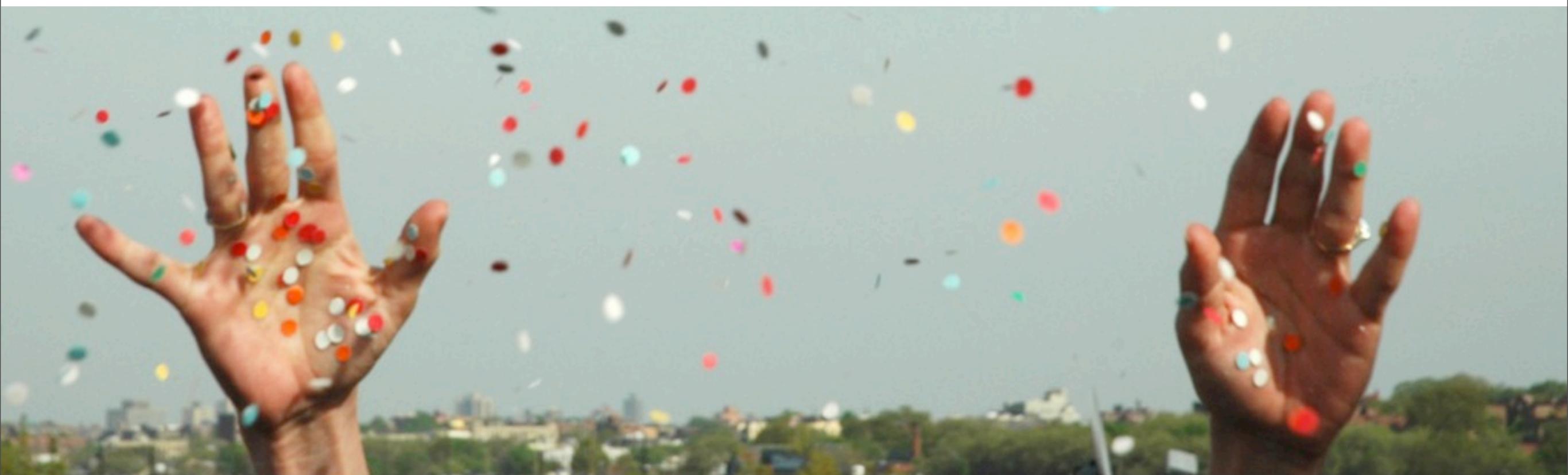




20 COOL THINGS YOU CAN DO WITH PYTHON, PART A

Did someone say par-tay?



DID SOMEONE SAY PAR-TAY?



```
for i in range(5):
    print("Let's get it started (ha)")
    print("Let's get it started in here.")

print("Yeah.")
```

As Will.i.am would say,
“Let’s get this party started!”

20. WRITE THE NEXT DROPBOX

Python is powerful enough to power Dropbox.



Your stuff, anywhere

[Sign up](#)

[or Sign in](#)

20. WRITE THE NEXT DROPBOX



Python creator Guido van
Rossum left Google to work
for Dropbox in 2012.

photo by Tendenci.org

19. TEACH KIDS TO CODE

You can use Python
to teach your kids
how to code.

That's how simple
and well-designed
Python is.



But what happens at a kid's day at PyconUK?

Glad you asked! Mums and sons, dads and daughters and developers and teachers come together for exciting adventures in code. One example (among many) from last year was Rebecca, Penelope and Emily who worked with three professional developers to create a flying-saucer game in Minecraft. They ended up presenting their work to the *whole conference* and got a huge round of applause! Here they are explaining what they got up to:



18. TEACH MIT STUDENTS TO CODE

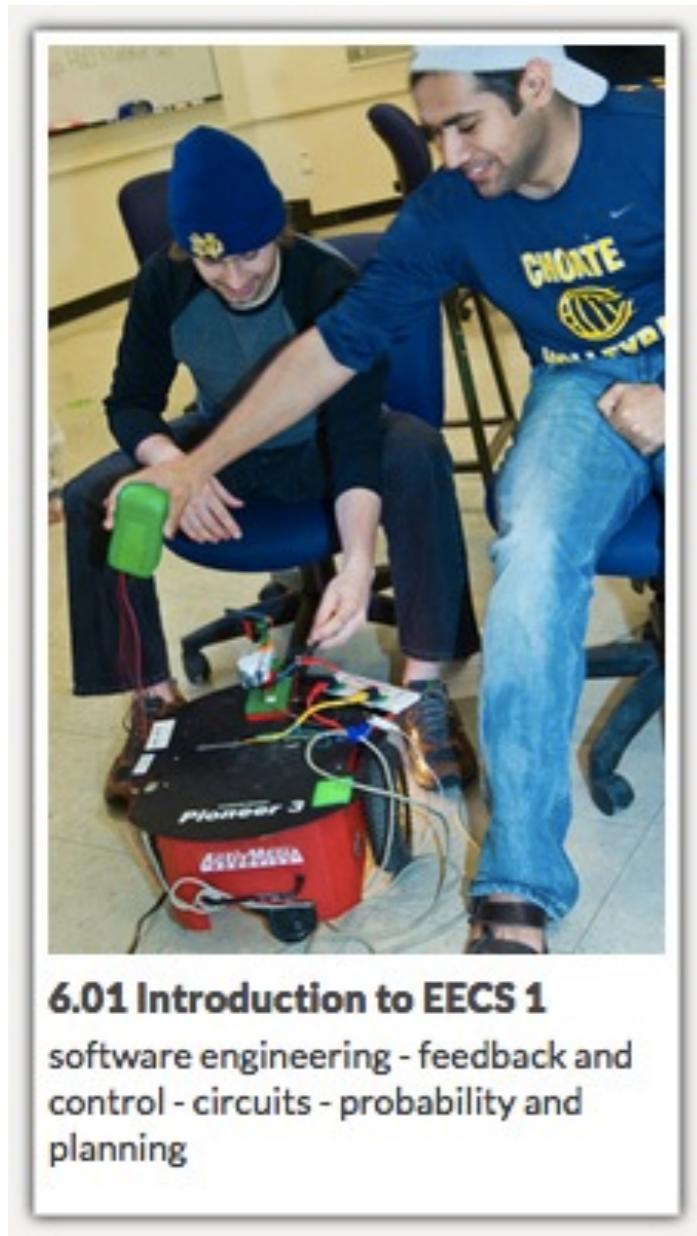
Python is used in MIT's Introduction to Electrical
Engineering and Computer Science courses



18. TEACH MIT STUDENTS TO CODE

My first Python program was an HP iPaq app to navigate around the MIT Stata Center with speech-to-text (2004)

<https://www.flickr.com/photos/joiseyshowaa/1279750389>



6.01 Introduction to EECS 1

software engineering - feedback and control - circuits - probability and planning



17. MAKE OR LOSE MILLIONS

You can write Python code to automatically buy and sell stocks with real money.

Your algorithms, trading live.

With Quantopian, you turn your investment goals into an algorithm that **trades stocks**. We help you develop your algorithm by providing **intelligent automation**, our **community** of investors, and professional-grade data. Then we turn your strategy into reality by **executing your algorithm** in the market.

[CODE A SAMPLE ALGORITHM](#)

[NO-CODE ALGORITHM BUILDER](#)

Cumulative performance since Jan 06, 2014

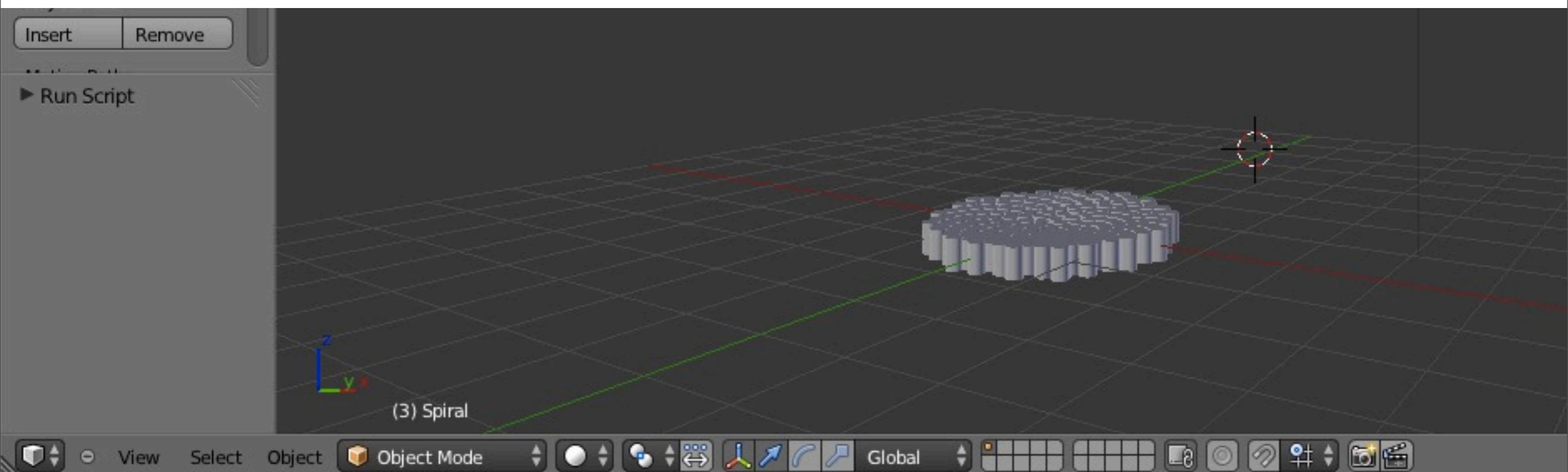


17. MAKE OR LOSE MILLIONS

Tools like Quantopian let you take on Wall Street with just a few lines of Python code.

16. MAKE 3D PRINTED JEWELRY

I used Blender 3D Python scripting to make this pendant.



```
mesh = bpy.data.meshes.new(name="Spiral")

for i in range(0, n):
    theta = i * math.radians(137.5)
    r = c * math.sqrt(i)
    #bm.verts.new((math.cos(theta) * r, math.sin(theta) * r, 0.0))
    bpy.ops.mesh.primitive_cylinder_add(
        radius=0.1,
        location=[
            math.cos(theta) * r,
            math.sin(theta) * r,
            0.0])
```

15. MAKE 2D ART

I was a professional artist for a few years, with a studio practice in SF.

I created some of my artwork with Python code (PIL, PyCairo).



14. GIS

Shapely for GIS analysis.
Based on GEOS.

Fiona to read/write GIS data.

Powerful, free Python tools for
geospatial programming.

<http://www.macwright.org/2012/10/31/gis-with-python-shapely-fiona.html>

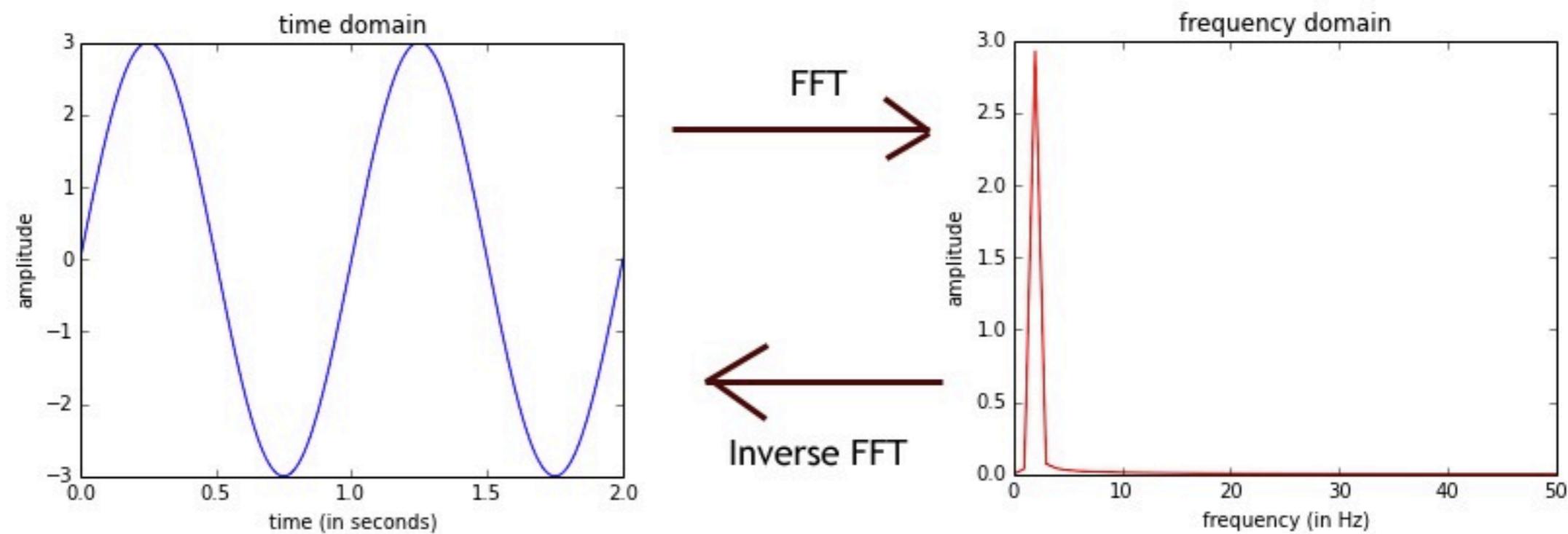
14. GIS

You can also write Python scripts for Esri's ArcGIS platform.

The screenshot shows the Esri website with a dark background. In the top right corner, there is a "Sign In" link and a search bar with a magnifying glass icon. The top navigation bar includes links for "Industries", "Products", "Support & Services", "About", and "Community". On the left side of the main content area, the text "Esri Tapestry Segmentation" is displayed in large yellow letters. Below this, a smaller text reads: "We're a nation of ZIP codes + neighborhoods. See how the next generation of Tapestry describes yours →". To the right of the text, there is a graphic of a map of the United States where different regions are highlighted in various colors (yellow, green, pink, purple) and marked with icons representing people and buildings. At the bottom left, there are four small white dots.

13. SOUND ANALYSIS/GENERATION

Represent & analyze sound waves in time and frequency domains.

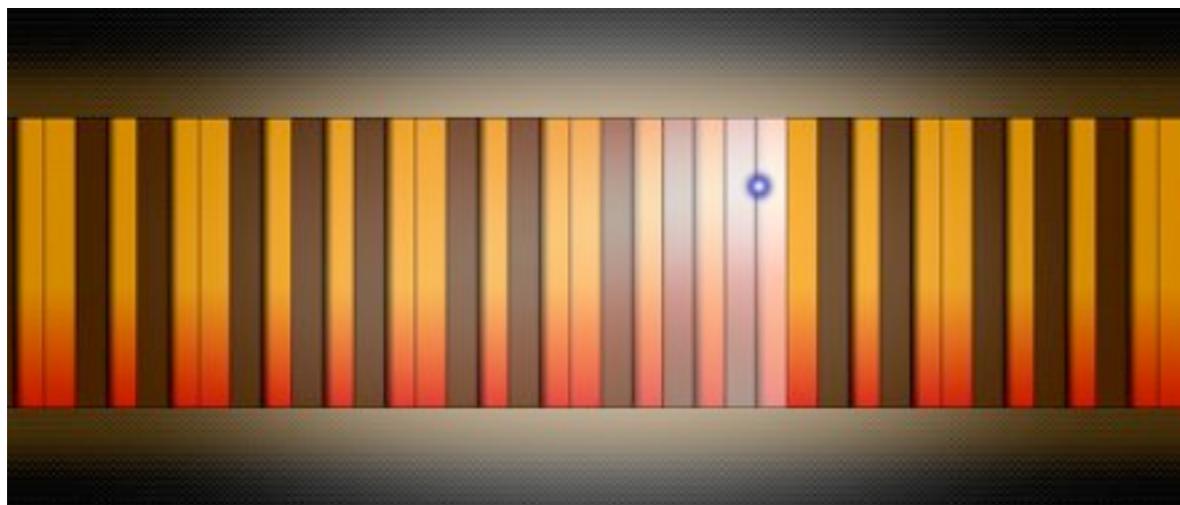


<https://github.com/calebmadrige/FourierTalkOSCON>

And make funny noises.

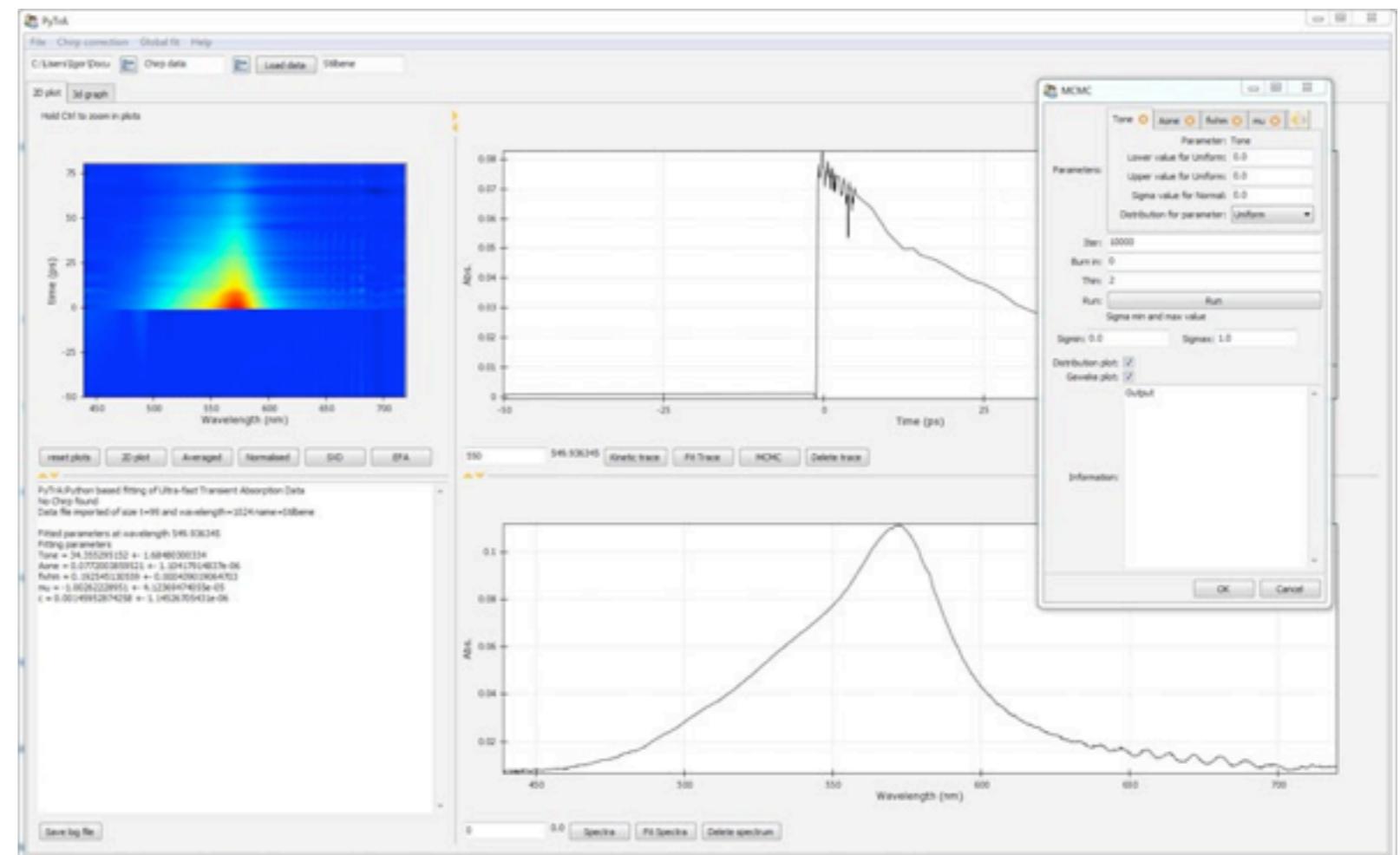
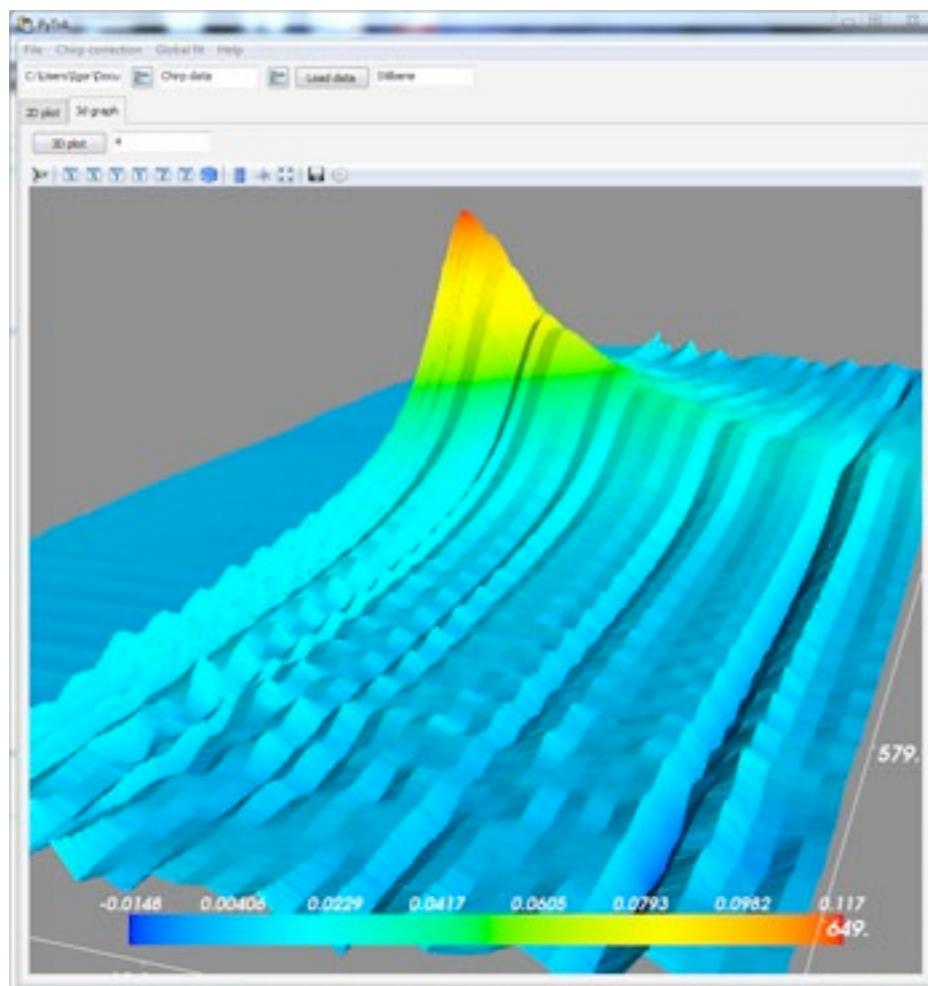
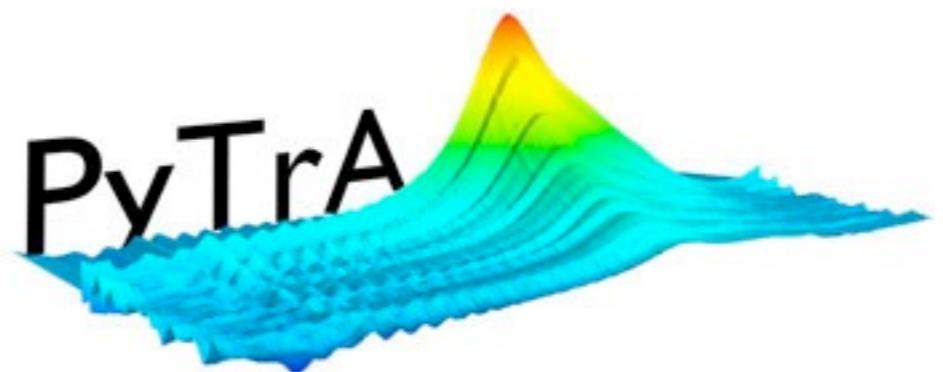
12. MOBILE/TOUCHSCREEN APPS

With Kivy, you can write apps in Python for mobile and touchscreen devices.



11. SCIENTIFIC DATA ANALYSIS

Need a Python library for transient absorption spectroscopy?
Yep, there's one for that.



<http://www.photonfactory.auckland.ac.nz/en/photon-factory/python-based-transient-absorption-spectroscopy-data-analysis.html>

11. SCIENTIFIC DATA ANALYSIS

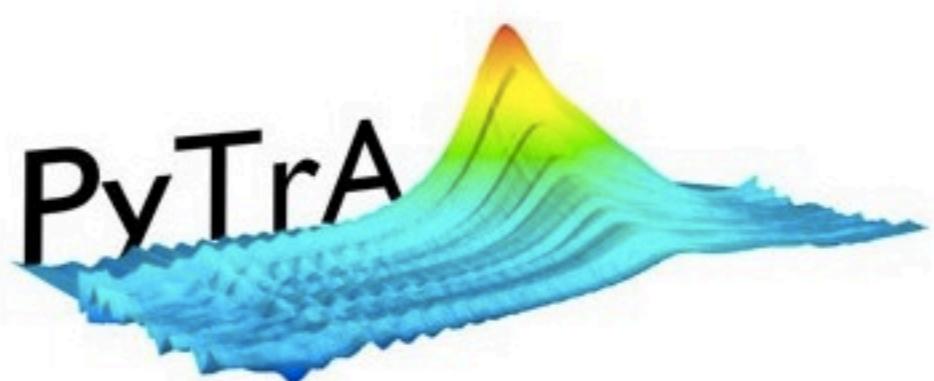
PyTrA is a project from the Photon Factory laser facility of the University of Auckland, New Zealand.

Photon Factory

Python-Based Transient Absorption Spectroscopy Data Analysis

PyTrA combines many of the common fitting techniques used in ultrafast transient absorption spectroscopy in an easy to use package.

Transient absorption spectroscopy is a pump probe technique that provides details of how excited molecules' absorbance changes just after being excited. In the Photon Factory, a pump pulse 150 fs in duration can be tuned to different single wavelengths to excite the molecules into their excited state. Then a probe pulse that contains a full spectrum of colour is used to take a snapshot of the absorbance of the molecules at set time intervals after their excitation. The probe can then be delayed relative to the pump and the decay in the excited molecules can be observed.



MORE TO COME

Yep, Python can do amazing things!

Stay tuned for 10 more cool things you can do with Python.



COMING UP NEXT...

Part I with Carol and Trey

Numbers, strings, variables, booleans, conditionals

