A developer amongst (data) journalists



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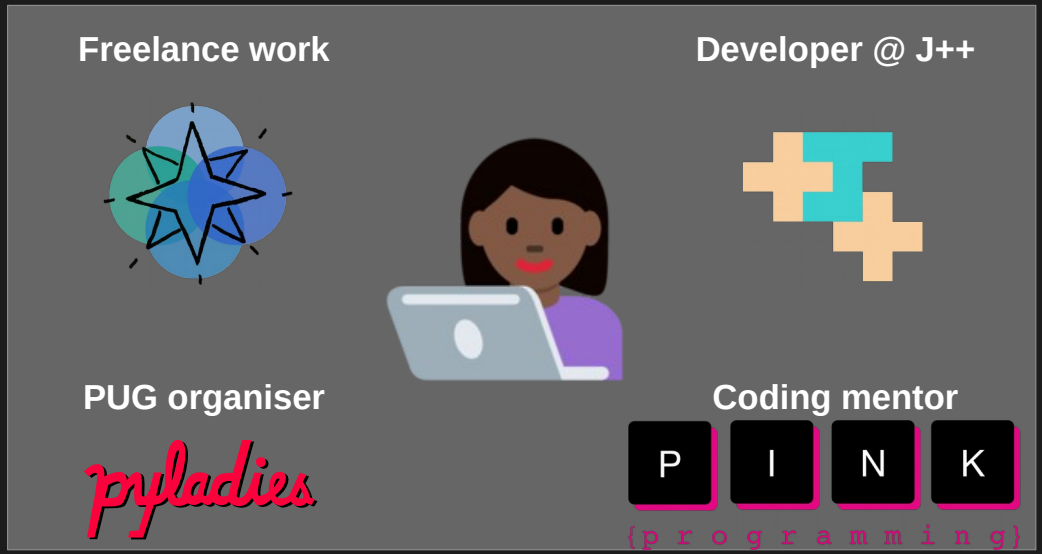
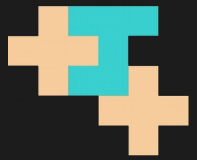
Web developer + Data scientist

digital agency, early startup, consultancy

Python, Clojure

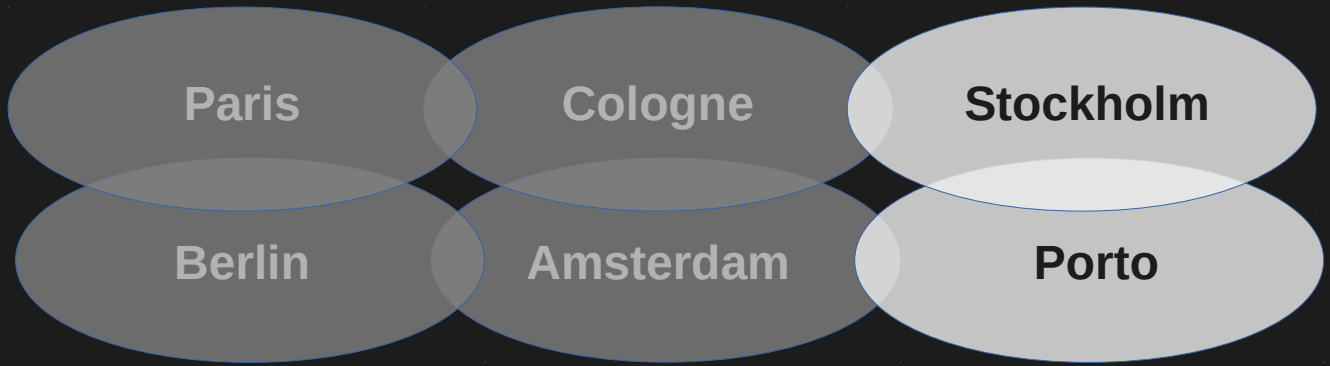




Journalism Plus Plus (J++)

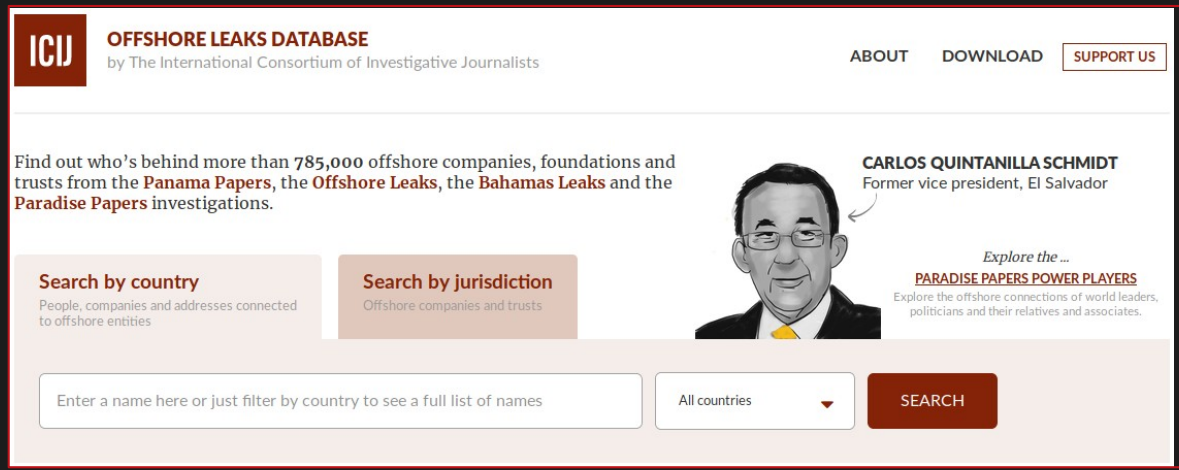
jplusplus.org

team of data journalism specialists



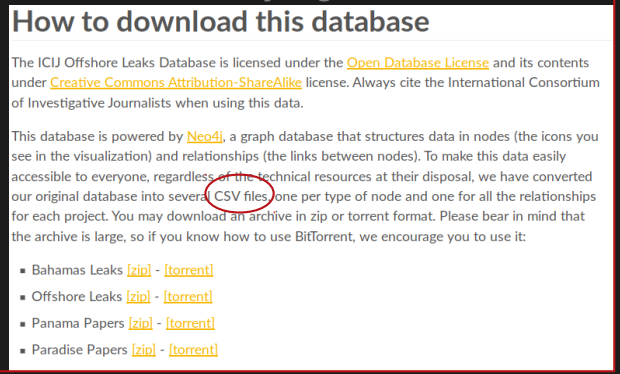
Data journalism

- **Identifying / investigating stories**
  web scraping, APIs, data analysis
- **Presenting / telling stories**
  web app, interactive data visualisation



ICIJ – The Panama Papers

offshoreleaks.icij.org

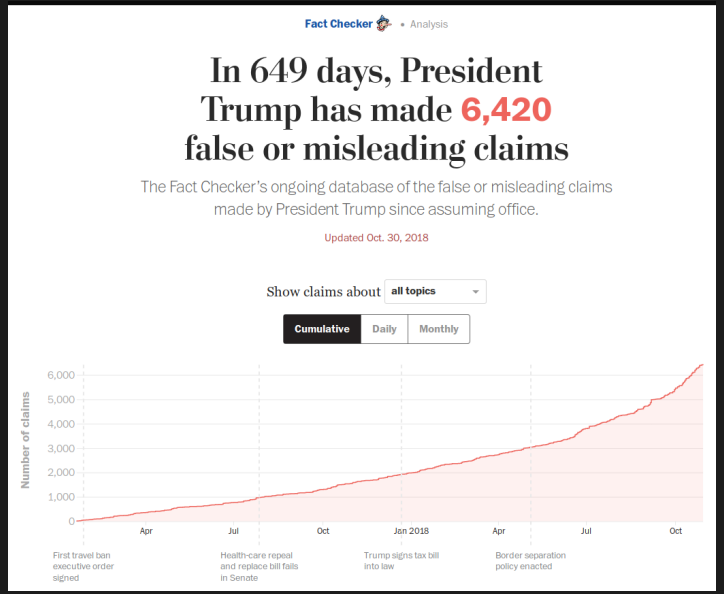


How to download this database

The ICIJ Offshore Leaks Database is licensed under the Open Database License and its contents under Creative Commons Attribution-ShareAlike license. Always cite the International Consortium of Investigative Journalists when using this data.

This database is powered by Neo4j, a graph database that structures data in nodes (the icons you see in the visualization) and relationships (the links between nodes). To make this data easily accessible to everyone, regardless of the technical resources at their disposal, we have converted our original database into several CSV files, one per type of node and one for all the relationships for each project. You may download an archive in zip or torrent format. Please bear in mind that the archive is large, so if you know how to use BitTorrent, we encourage you to use it:

- Bahamas Leaks [zip] - [torrent]
- Offshore Leaks [zip] - [torrent]
- Panama Papers [zip] - [torrent]
- Paradise Papers [zip] - [torrent]

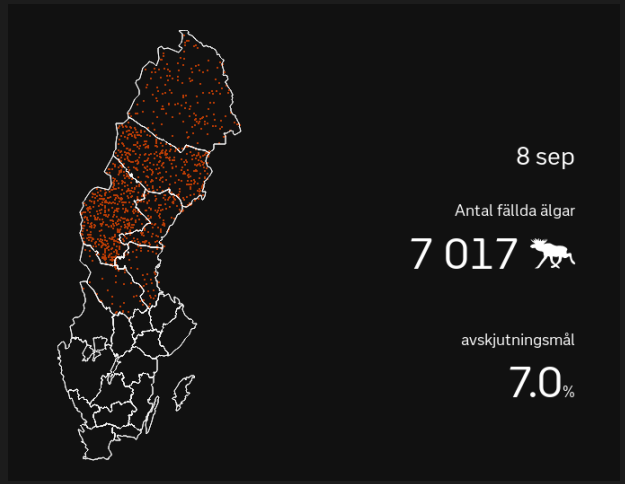


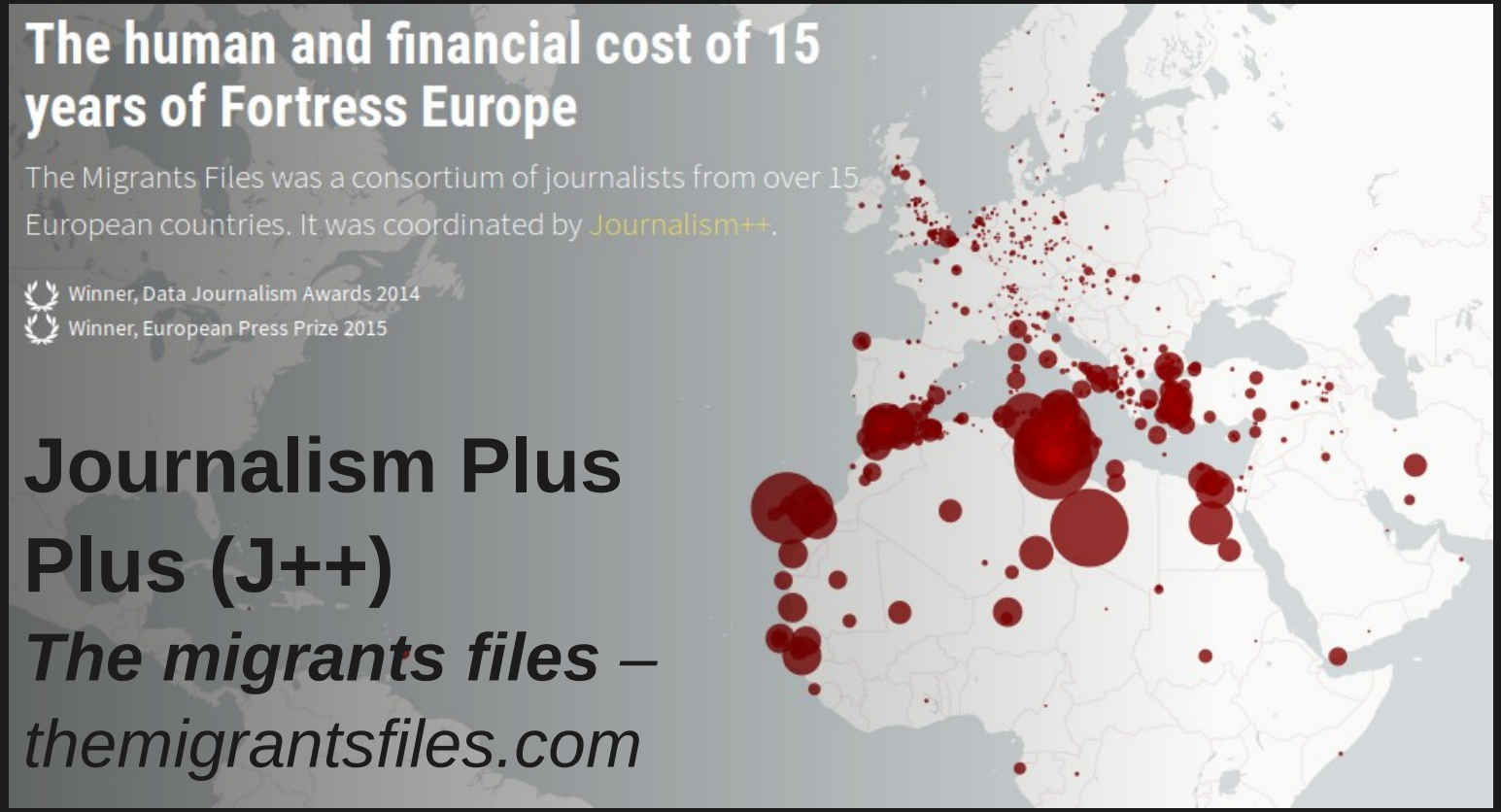
The Washington Post

washingtonpost.com/graphics/politics/trump-claims-database

SVT

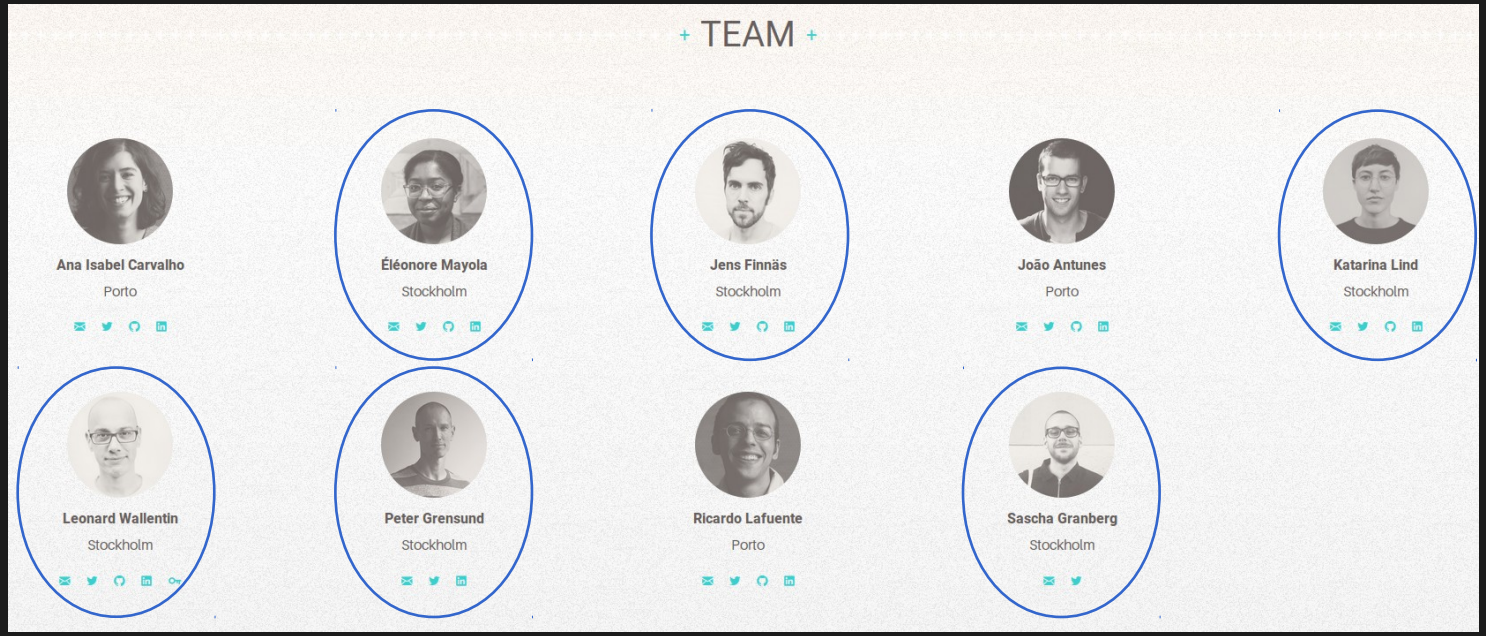
svt.se/special/algjakten-i-siffror




The human and financial cost of 15 years of Fortress Europe
The Migrants Files was a consortium of journalists from over 15 European countries. It was coordinated by Journalism++.
Winner, Data Journalism Awards 2014
Winner, European Press Prize 2015
Journalism Plus Plus (J++)
The migrants files – themigrantsfiles.com

Journalism Plus Plus (J++)

Stockholm and Porto offices



Journalism Plus Plus (J++)

Stockholm office

- **Programming for journalists** – Python course
- **Newsworthy** – automated story finding
- **Clients projects** – web applications, data analysis
- **Local/global news stories** – research, analysis, viz

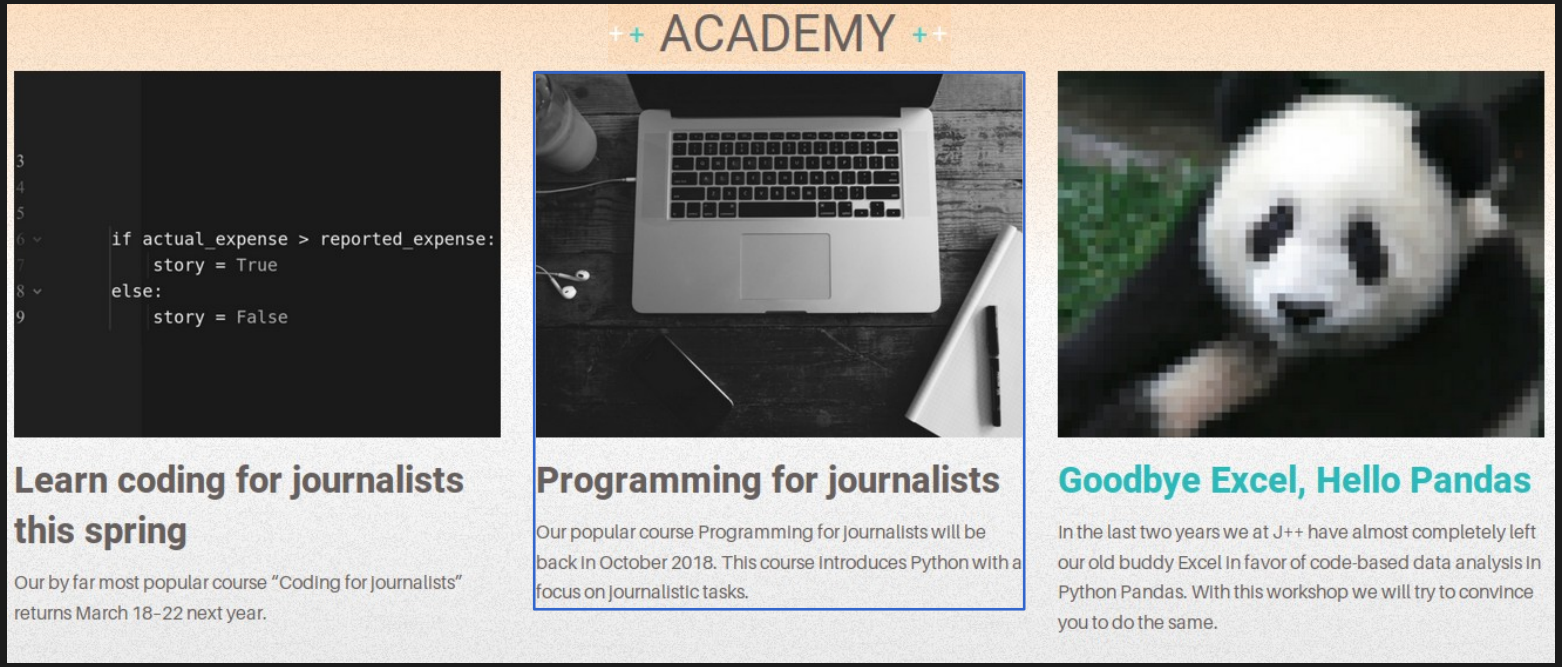
What I'm NOT going to talk about:

- Being a newsroom developer
- How to become a data journalist (although I'm happy to chat about it)

What I'm going to talk about:

- My experience at J++ (teaching Python to journalists, working on internal/client projects)
- My takeaways from that experience

Programming for journalists – Python course



jplusplus.org/en/academy

6 sessions already run → programme set but adapted to each class

Programming for journalists – Flexible scope

Classroom teaching

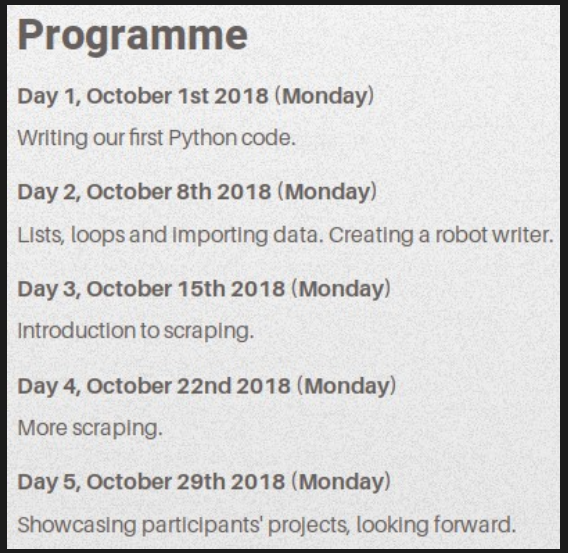
- CLI basics
- Python basic data structures
- *if* statements, *for* loops
- Work with Python libraries, APIs, reading/writing files

Support

- Slack group (24/7)

Applied to journalism

- Generating texts
- Web scraping
- Gather tweets
- Course project



Programme

Day 1, October 1st 2018 (Monday)

Writing our first Python code.

Day 2, October 8th 2018 (Monday)

Lists, loops and importing data. Creating a robot writer.

Day 3, October 15th 2018 (Monday)

Introduction to scraping.

Day 4, October 22nd 2018 (Monday)

More scraping.

Day 5, October 29th 2018 (Monday)

Showcasing participants' projects, looking forward.

jplusplus.org/en/academy/programming-for-journalists

Programming for journalists – Flexible scope

Day	2015/16	2017	2018
Day 1	Variables, data types, conditionals, functions	Variables, data types, conditionals, functions	Variables, data types, conditionals
Day 2	Lists, dicts, loops, more functions	Lists, dicts, loops, functions	Lists, dicts, loops
Day 3	HTML basics, intro to web scraping, read/write files	HTML basics, intro to web scraping, read/write files	HTML basics, intro to web scraping, read/write files
Day 4	Scrape data from a web page, save data in database	Scrape data from a web page	Scrape data from a web page
Day 5	Demo git / Github	Demo git / Github How the web works, HTTP requests, Python tools	Demo git / Github

Programming for journalists – Flexible scope

J++ | Python for Journalists

Day 1	Variables, data types, conditionals
Day 2	Lists, dicts, loops
Day 3	HTML basics, intro to web scraping, read/write files
Day 4	Scrape data from a web page
Day 5	Demo git / Github

MIT | Intro to CS and Programming in Python

1	What is computation?
2	Branching and Iteration
3	String Manipulation, Guess and Check, Approximations, Bisection
4	Decomposition, Abstractions, Functions
5	Tuples, Lists, Aliasing, Mutability, Cloning
6	Recursion, Dictionaries
7	Testing, Debugging, Exceptions, Assertions
8	Object Oriented Programming
9	Python Classes and Inheritance
10	Understanding Program Efficiency, Part 1
11	Understanding Program Efficiency, Part 2
12	Searching and Sorting

Udacity | Programming Foundations with Python

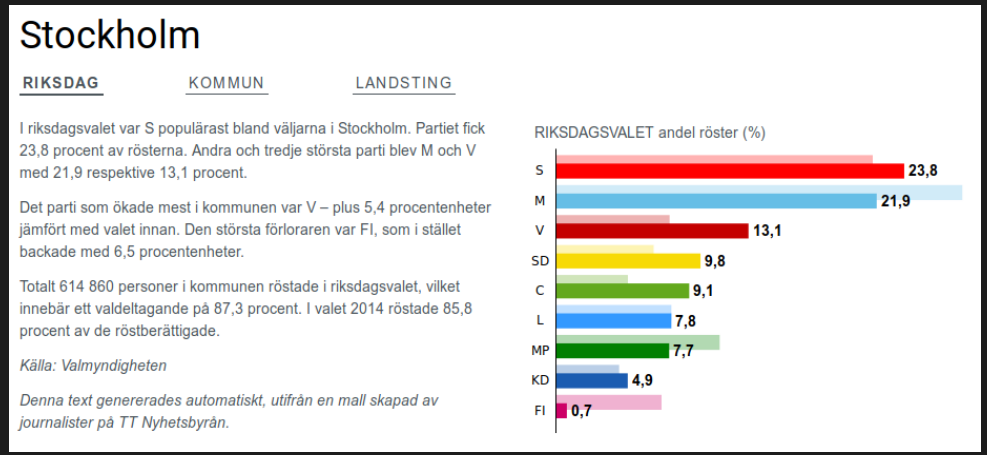
Lesson 1	Intro and installation
Lesson 2	Use functions, explore classes
Lesson 3	OOP concepts, use 3rd party packages
Lesson 4	Create classes
Lesson 5	Personal project

Programming for journalists – Text robots

Read CSV file → Use election results data

FOR loop → Go through cities/regions

Use a dictionary
IF statement
Print statement → Write an article About the results



Stockholm

RIKSDAG KOMMUN LANDSTING

I riksdagsvalet var S populärast bland väljarna i Stockholm. Partiet fick 23,8 procent av rösterna. Andra och tredje största parti blev M och V med 21,9 respektive 13,1 procent.

Det parti som ökade mest i kommunen var V – plus 5,4 procentenheter jämfört med valet innan. Den största förloraren var FI, som i stället backade med 6,5 procentenheter.

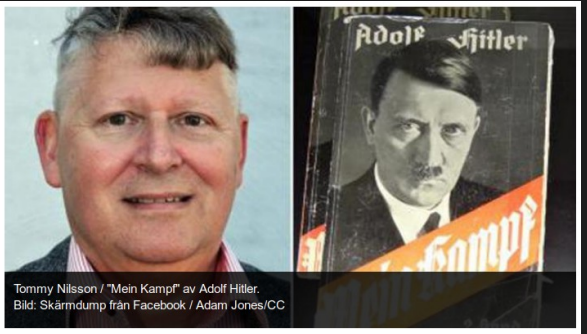
Totalt 614 860 personer i kommunen röstade i riksdagsvalet, vilket innebär ett valdeltagande på 87,3 procent. I valet 2014 röstade 85,8 procent av de röstberättigade.

Källa: Valmyndigheten

Denna text genererades automatiskt, utifrån en mall skapad av journalister på TT Nyhetsbyrån.

sverigesradio.se/sida/artikel.aspx?programid=4657&artikel=7037094

Programming for journalists – Students projects



https://www.etc.se/inrikes/sds-toppnamn-i-kyrkovalet-kopte-nazistbocker-mitt-i-valrorelsen

https://svenska.yle.fi/artikel/2016/10/23/kolla-hur-priserna-pa-bilforsakring-kan-se-ut-dar-du-bor-skillnader-pa-flera

It’s so exciting!

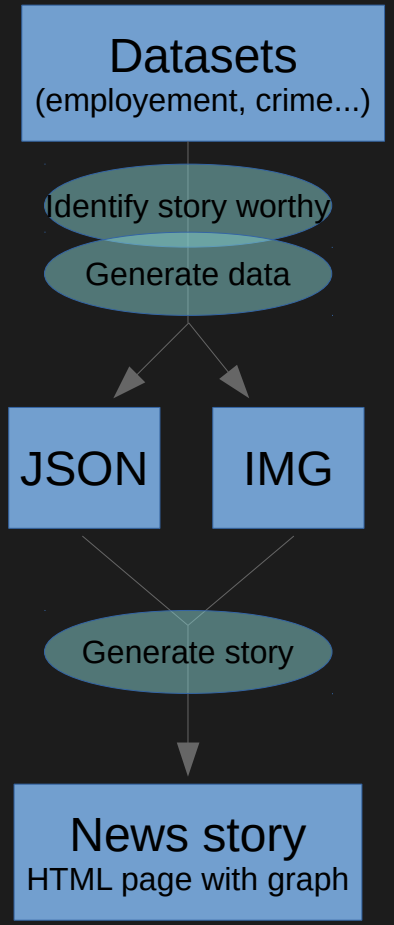
- Keeping things **simple** and **practical**
  - → implement what they learn
- We’ve actually made new members of the Python **community**
- Teaching new **skills**
  - → impact on their career
- We’re having a (indirect) **positive impact** on society

It’s also challenging

- **Adapting to the different students coding levels**
  - remove things if they need more time
  - give more to more advanced students

- **There are so many tools, notions, libraries**
  - don’t overwhelm them
  - develop a follow-up course

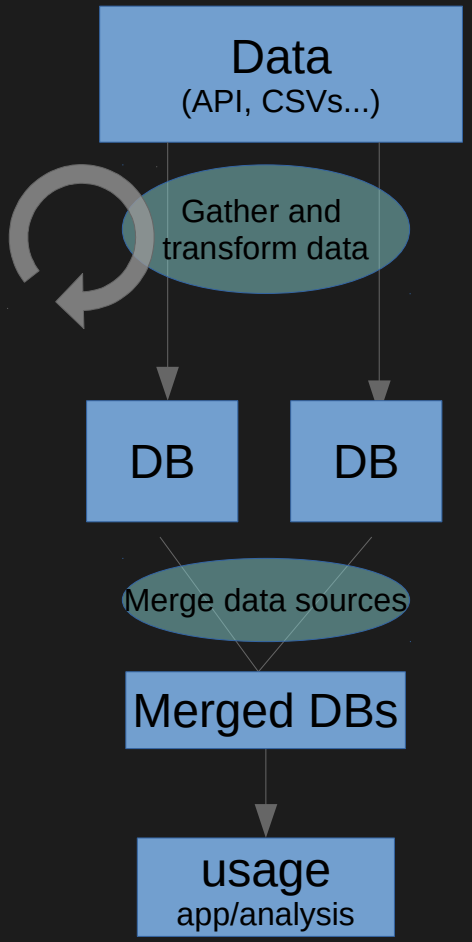
- **Get them to interact with other data journalists and other members of the Python community**
  Alumni network? Local meetup groups?



Newsworthy – automated story finding

Node.js, Amazon Web Services

- Internal project based on a statistical model
- Feeds on local or European level databases
- Generates JSON format data + graph images
- Query data to write news stories



Clients projects – web applications, data analysis

Node.js or Python, Postgres, AWS

- Use clients data and/or open data
- Feed a database + add data upon updates
- Query data for applications or analysis

Aim

- Data pipeline fully automated and reusable
- Include monitoring and alerting

Current state

- Data pipeline – not fully automated, differs / projects
- Code organised in a modular fashion
- Research and design for a new pipeline
- Identification of reusable bits

Plan and ideas [in progress]

- Lambda functions and serverless architecture
  → Make use of the modular structure
- Expand our use of AWS services
  → Quick set-up and for securely hosted services
- Independent app for monitoring and alerting system

Local/global news stories – research, analysis, viz

Example: **EDJNET - OneDegreeWarmer**

- Investigating climate data
- Part of a European network of journalists
- First story (09/2018): temperatures in European cities
- Communication, coordination, data analysis/modelling, text generation, web application

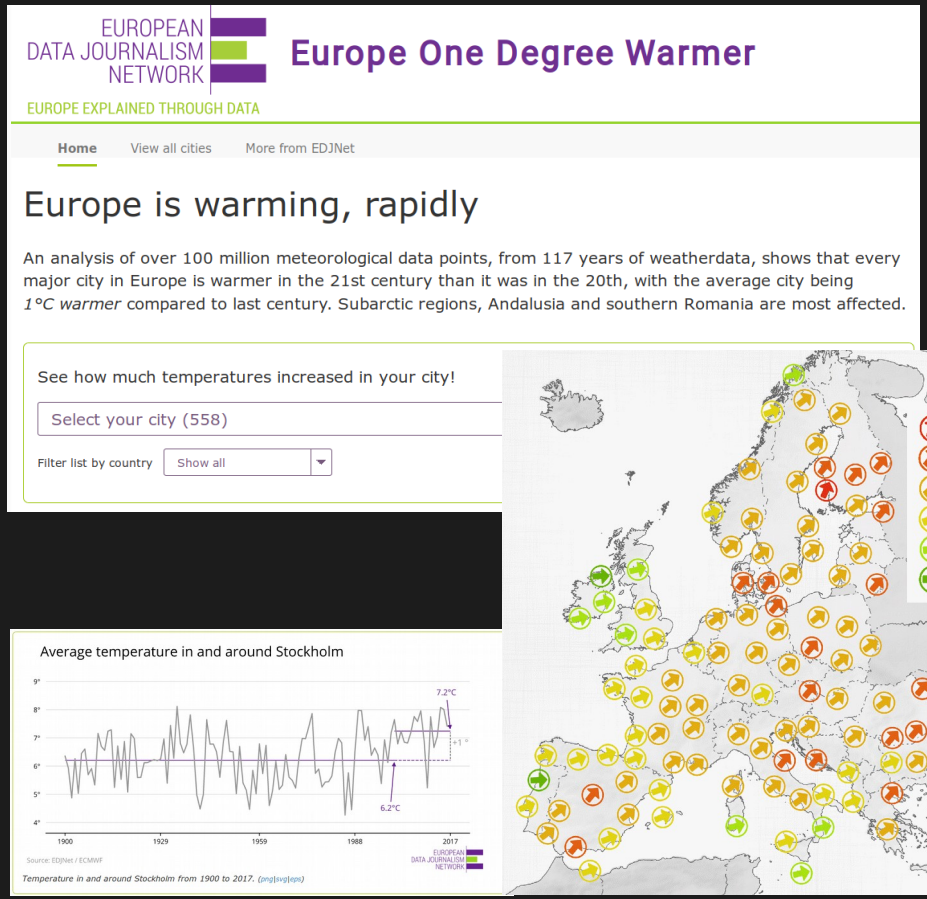
European Data Journalism Network - EDJNet

europeandatajournalism.eu | @EdjNet

Consortium of data journalists throughout Europe

Independent platform for data-driven news on European affairs

Open source content in several languages



OneDegreeWarmer

onedegreewarmer.eu

Analysis of temperaturess in 558 European cities from 1900 to 2017

Using 2 datasets from the European Centre for Medium-Range Weather Forecasts (ECMWF)

Analysis by ECMWF scientists to make up for weather stations change of location, cities expansion...

Highlight temperature increases and consequences (health, roads/rails traffic, students focus...)

OneDegreeWarmer – the story spread

PUBLISHED ARTICLES

English
- EDJNet: Europe is getting warmer, and it's not looking like it's going to cool down anytime soon
- EU Observer: Every major city in Europe is getting warmer
- Kosovo 2.0: Western Balkan's heating up
- OBC Transeuropa: South-East Europe is burning: how temperatures have risen for the last 117 years
- Vox Europ: Europe is getting warmer, and that is not going to change

Albanian
- Kosovo 2.0: Po nxehet Ballkani Perëndimor

Bosnian/Serbian/Croatian
- EurActive: U Jugoistočnoj Evropi sve toplije
- H-Alter: Toplo, toplije
- OBC Transeuropa: U Jugoistočnoj Evropi sve toplije

Bulgarian
- Capital Bulgaria: 24 сеп 2018, 9:00, 794 прочитания Средната температура в 11 български града се е покачила с над 1

French
- EDJNet: L'Europe se réchauffe, et ç'est parti pour durer
- Rue 89 Bordeaux: La température moyenne a grimpé de près d'un degré depuis 1900 à Bordeaux
- Rue 89 Stasbourg: Voici comment Strasbourg s'est réchauffée d'un degré depuis 2000
- Rue 89 Lyon: Lyon, plus forte augmentation de Rhône-Alpes

German
- EDJNet: In Europa wird es immer wärmer, und es sieht nicht so aus, als würde es sich bald abkühlen
- Spiegel Online: Europa: ein Grad wärmer
- Vox Europ: Europa wird unaufhaltsam wärmer

Italian
- AskaNews: Surriscaldamento record porta a Belluno vino e olio d'alta quota
- EDJNet: L'Europa si riscalda, sempre di più
- Corriere delle Alpi: Cambiamenti climatici, a Belluno il record negativo in Italia
- Gazzetta di Mantova: Inchiesta sul clima, così il surriscaldamento globale mette a rischio il nostro futuro
- Il Piccolo: Clima più caldo in Fvg, a Trieste e Gorizia aumento di un grado in 20 anni
- Il Tirreno: Emergenza clima, le città che si stanno riscaldando di più: Piombino seconda in Italia
- La Nuova Ferrara: Clima sempre più bollente, Ferrara nella "top ten" in Italia
- La Provincia Pavese: Cambiamenti climatici. Pavia terza in Italia per surriscaldamento
- Messagero Veneto: Clima, estati roventi ed inverni senza neve: così si sta surriscaldando il Friuli Venezia Giulia
- OBC Transeuropa: Sud-est Europa: sempre più caldo

Polish
- EDJNet: Europa jest coraz cieplejsza i nie zapowiada się na ochłodzenie

Portuguese
- EDJNet: Europa está a ficar mais quente e parece que não vai refrescar assim tão cedo
- Público: As cidades europeias estão mais quentes. Portugal está no fim da lista
- Zap Europa cada vez mais quente. Portugal é o país que menos aqueceu

Slovenian
- Pod Črto: Analiza temperatur na stari celini: v evropskih mestih je vse bolj vroče
- RTV Slovenija: Analiza temperatur na stari celini: v evropskih mestih je vse bolj vroče

Spanish
- EDJNet: Europa se está calentando, y no va a enfriarse pronto
- El Confidencial: ¿Cuántos días de calor sufren tus hijos en el colegio comparado con los que tú pasaste?

OneDegreeWarmer – challenges

Europe One Degree Warmer: How we got things wrong—and are working on fixing them

The European Data Journalism Network published an analysis of temperature trends in 558 cities and their surroundings in Europe on Monday, 24 September 2018, starting at 08:00 CEST, in partnership with several news outlets. A few hours after publication, several commenters pointed out that the temperature data for some cities in Sweden, which had been described in the analysis as the fastest-warming in Europe, were probably erroneous. Swedish blogger Göran Johnson, for instance, used the Swedish weather service's data to point out the problems in our data for the city of Kiruna.

medium.com/european-data-journalism-network/europe-one-degree-warmer-how-we-got-things-wrong-and-are-working-on-fixing-them-67c9c892c13c

The mistake was identified on Tuesday, a day after publication. Data for 38 locations had been collected on a different machine from the rest and had not been properly checked. The methodology for all cities was to use the ERA-20C database for the period 1900–1978, the ERA-interim database for the period 1979–2017 and to correct the first time series using the second one (the code used for the reconciliation is available in a Jupyter Notebook). For the 38 locations with erroneous data, the reference data for the period 1979–1998 was ERA-20C's (instead of ERA-interim's) and no reconciliation had taken place. The result was that some locations were shown to be warming much more rapidly than they actually were, sometimes by more than two degrees Celsius. (The data for the 520 other locations was correct).

OneDegreeWarmer – challenges

> We would like to apologise to all the media partners of EDJNet and their readers for the mistake in the data. The error was preventable, had we put in place more checks to ensure the integrity of the data.

> The error was compounded by the fact that most of the erroneous data showed faster warming in sub-arctic regions, which was an outcome experts mentioned we could expect. A strong confirmation bias was at play. While we did check the results at the European level with climate experts, a talk with local (Swedish) experts would have allowed us to discover the error before publication.

Technical challenges

→ automated checks (monitoring / alerting)

Human challenges

→ domain knowledge checks / feedbacks

Methology and data at https://gitlab.com/edjn/onedegwarmer-shared-data

Being a developer among (data) journalists

Skills involved

- Curiosity, general/domain knowledge
- Communication (document)
- Flexibility (new techs, ideas…)
- Deliver: be simple and practicle (cf Zen of Python :))
- Data work: Python (scripting, Jupyter Notebook, Pandas, Matplotlib….), QGIS
- Web work: JS (Node.js, React.js…), HTML, CSS
- Other: SQL, version control (Git), AWS, APIs...

Methodology and processes

Tools

- **Slack** (communication with Sthlm-Porto, Sthlm only, projects specific, ideas/cool stuffs)
- **Trello** (general planning, projects features)
- **Google docs**

Processes

- Weekly **planning** meeting
- Monthly **update** meeting Sthlm-Porto
- Meetings **project specific** within networks (EDJNET)

(Workplace) interactions

- Think your interactions with “non-technical” people
  - → Take on non-experienced coders
  - → Help non-coders eager to automate their work
  - → Be proactive on helping other professionals
- Balance between giving enough info, but not too much
- Favour knowledge exchange (code, domain knowkedge)

Work opportunities

Tech work != tech organisations

- **Widen your perspectives**
- **Widen your network(s)**
- **Widen your job search**

Science, art, education, travel, media...

Resources

- https://github.com/Eleonore9/-pyconse18
- http://datajournalismhandbook.org/1.0/en/

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github.com/eleonore9
Elle-est-au-nord.com

jpluplus.org