



scifabric

PYBOSSA Technology

What is PYBOSSA?

PYBOSSA is our technology, used for the **development of platforms and data collection** within collaborative environments, analysis and data enrichment

PYBOSSA is an extremely flexible and versatile software with a multitude of applications that adapt to each specific case facilitating many of the daily tasks that take place in research environments such as museums, art galleries, heritage institutions, libraries of any kind, market research companies, hospitals, universities and all those organisations that manage data or require information from their customers/users -such as airports, shopping malls, banks, hotel chains, etc.

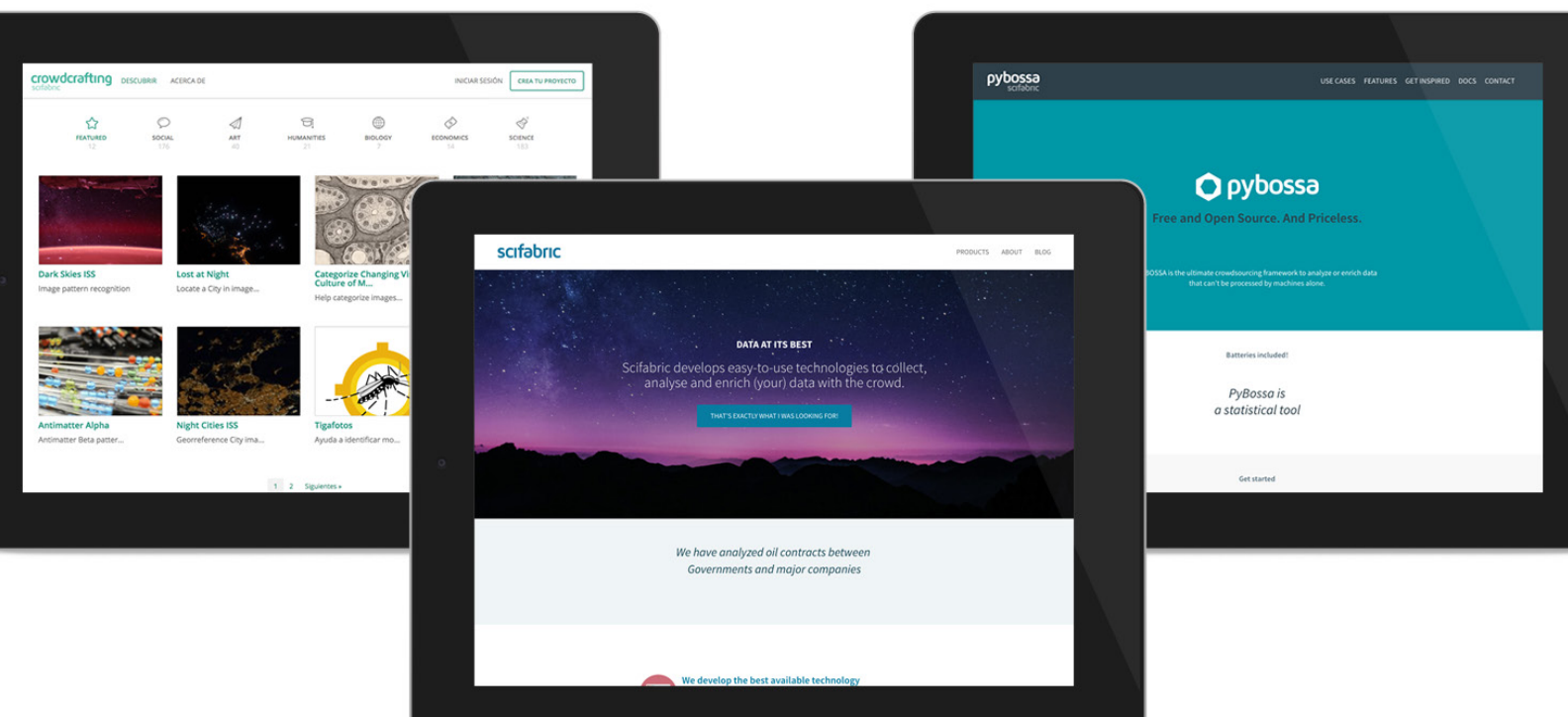
PYBOSSA's simplicity consists in its easy adjustment to any areas using any of the available templates, this way every customer can then adapt it to their own needs.

PYBOSSA integrates with other data collection products such as the low cost computer Raspberry Pi and its sensors (camera, infrared camera, etc.) or EpiCollect + a mobile application to capture data with mobile phones' sensors (camera, microphone, GPS, etc.). Through all these integrations PYBOSSA allows data capture for further analysis made by users in a transparent and easy way.

Furthermore, PYBOSSA works with:

CROWDCRAFTING.

PYBOSSA's public server. To date more than two thousand different projects have been created and more than two million contributions have been stored by more than forty-two thousand volunteers from around the world that have participated with the platform. In 2014, crowdcrafting won the Nominet Trust International Award for being considered the world's most versatile platform on collaborative science - or citizen science. On the platform you can contribute to a wide variety of projects -ranging from the study of antimatter (project created by CERN), the fight against malaria project created by the Institute of Tropical Diseases in Switzerland) or the transcription of Winston Churchill's agenda (project created by George Washington University), just to name a few.

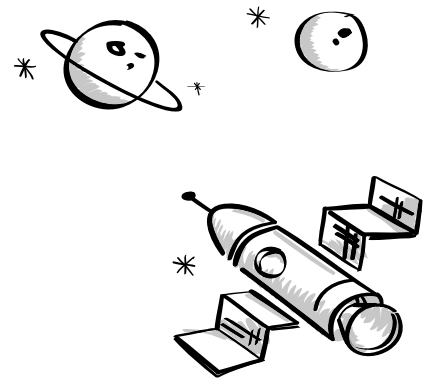


ARTIFICIAL INTELLIGENCE.

We are currently testing the integration of artificial intelligence within PYBOSSA to facilitate and automate the enrichment and data pre-processing. This way, data collection, image identification, facial recognition and translation will be analysed through artificial intelligence before being validated by the human eye, if wished to do so.

Our PYBOSSA technology facilitates task performance of several kinds, always depending on the project's requirements:

- Transcribe handwritten digital documents with tables, etc.
- Transcribe video and audio.
- Analyse images, videos or sound.
- Capture data to improve facilities' management.
- Geotag files.
- Identify or label objects, faces, sounds, etc. in images, sound or video files .
- Identify areas of digitised works such as painted animals, geolocation of places, sentiment analysis .
- Enrich any kind of records or registries.



Thanks to PYBOSSA, we have completed projects with high social impact such as help preventing the spread and transmission of malaria in rural areas of Africa, set up research projects to study light pollution through photos taken at the International Space station, as well as studying how gravity affects antimatter. PYBOSSA has also been used to help detect cancer cells, to analyze the accessibility of European streets, to transcribe the agenda of Winston Churchill during the Second World War, to assist in the aftermath of humanitarian disasters like Typhoon Pablo in the Philippines, to analyze contracts between oil companies and governments, to prove political offenses and to recover and replicate Bronze Age collections of objects on 3D.

Due to the open nature of the technology, it is possible to enable different phases for the project, inviting users to beta test it, allowing the institution to gather the best possible feedback before publishing it.

This feature is really important, as it will allow prompt improvement without unexpected delays and testing the actual project since the very beginning with final users.

PYBOSSA has three main advantages

1. From the technical point of view

It is free and open source. This means benefits like: cost, flexibility, freedom, transparency, security, and accountability, that are unsurpassed by proprietary software solutions, granting organisations freedom from 'vendor lock-in' assuring long-term viability. Moreover, being open source means that PYBOSSA is a peer-reviewed software, ensuring security and accountability. With open source software, institutions don't need to wait for years to deploy a solution. Open source softwares can be "test driven" prior to procurement, and are particularly suitable for internal collaboration, rapid prototyping and experimentation. Both known and unanticipated users can be rapidly provisioned.

2. From the data analysis and enrichment features point of view

PYBOSSA is used for the development of platforms, data collection, analysis and data enrichment within collaborative environments. It is an extremely flexible and versatile software with a multitude applications that adapts to each specific case, facilitating many of the daily tasks that take place in research environments.

Our aim is the utilisation of our PYBOSSA technology in order to extend the development of research work and classification of our client's data through citizen participation.

Furthermore, we possess a plug in system, that adapts to each of the projects' needs, making it possible to extend the functionality of PYBOSSA to fulfill the institution's needs.

3. From the visual design and user experience capabilities point of view

PYBOSSA is fully adaptable to the customers' needs in terms of visual design and user experience capabilities. From the look and feel point of view - colours, layout, structure and so on, PYBOSSA can be fully customised using what we call "themes": HTML and CSS pages that will feature the same visual design from the institution, making it transparent for the final users' participation.

PYBOSSA's themes are fully responsive, it is possible to enable user participation from mobile phones, tablets and desktops presenting a different user experience based on the device they are using.

From the institution's point of view, PYBOSSA features a simple and easy to use "content management system" that allows users to modify the project's content as well as the platform itself (descriptions, updates, categories, statistics, user roles, etc.) from the web interface, making it possible to do changes on the fly in a matter of minutes.

To ensure the quality of the design and user experience, Scifabric have two usability experts that can fully create a new theme as well as the best possible user experience for the projects developed within this proposal.

Hosting set-up

Projects are cloud based with a secure back up within our provider's infrastructure. This backup system allows us to have point in time recovery solutions for the database, as well as full backups every day, allowing us to recover it at any given point or in the worst case scenario recover a full backup from a single day.

Our platform, has the capacity to gather thousands of users per task. One example is our Cities at Night project, where we nearly reached 5000 users (saving more than 1,5 answers per second in a very small server - less than 1GB of RAM).

Our solution is scalable from low data traffic to high, allowing to grow by spinning new instances of any of the components of the stack: database, PYBOSSA servers, background jobs for real time analysis.

We are as flexible as our clients want us to be.

Added Value

We are experts in what we do and we love what we do. We have more than 6 years experience with crowdsourcing. Our projects have been used across the globe, with more than forty-two thousand volunteers (in just one PYBOSSA server) from around the world that have participated within our platform, which allows data capture for further analysis made by users in a transparent and easy way. PYBOSSA is 5 years old, it is completely stable and widely used by the international crowdsourcing research community.

As well as analysing each of our clients' needs, we develop a unique product according to requirements, and maintain and host all projects within our servers. We also provide our clients with Scifabric's complete team knowledge and expertise. This way, not only will you have the best available technology, but also an extraordinary and friendly team of experts within the crowdsourcing and research fields.

The options with PYBOSSA are endless.
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