

# Gabriel Pettier

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## Experience

### 2014-present Tangible Display

Technologies: Python, Kivy, R, Docker, Docker-compose, Debian, Gentoo, Arduino, PyInstaller, Innosetup, Buildozer, Windows, Linux, OSX, BLE, JNI, Cython, Bash, Bourn Shell, Makefile. GLSL, Electron, ELK, LIDAR, GitLab

- Interaction/Multimedia development with Kivy:
  - Design, implementation, integration of multitouch & tangible UX for multiple clients, and products.
  - Development of a patented method to detect and classify phygital markers, allowing customers to configure their objects, and send detection info to third party application, into a product (ObjectViz).
  - Design and implementation of a Tangible application framework, with a plugin discovery system, and ability to define interaction with external applications, with custom UI to physical objects on multitouch tables.
  - Design and development of a data exploration solution, Tangible Data, delegating computations to R, and displaying the result both natively in Kivy and Electron using web technologies.
  - Design and development of a drag and drop CMS for tangible applications, allowing users to attach multimedia content to physical objects.
  - Design and implementation of a cryptographic license system, to tie distributed software to customer's computers. Implementation of a dongle based license solution to allow for license portability.
  - Development of a 3D point cloud visualisation system for LIDAR data, with multitouch navigation, level of detail loading by proximity to camera, working smoothly with dozens of millions of points.
  - Implement Arduino based applications to drive boards managing LEDs and RFID readers.
  - Implement usage data collection and presentation using the ELK stack.
  - Real time display of twitter search results and SMS messages and

physical interaction associated to them.

- And a lot of custom multimedia applications for clients...
- DevOps
  - Deployment and maintenance of multiple critical infrastructure software, (`Gitlab`, `Jenkins`, `Sentry`, `Wordpress`, `Zulip` and others).
  - Continuous delivery of packages of multiple projects, using `Gitlab-CI` and custom docker images.
  - Packaging for `Windows`, `OSX`, `Linux`, using `PyInstaller`, `InnoSetup`, and custom scripts.
  - Packaging and internal hosting of `Python` and `Cython` packages, that other internal applications depends on.

Projects for: Paco Rabanne, Armani, SNCF, EDF, Glenmorangie, ATS, WNE, Bottega-Veneta, CEA Tech, BCG, Métropole of Marseille, Candriam, JCDécaux, Yves Saint Laurent, ServicePlan, Orange, Dior.

## 2013-2014 Cloudwatt

- OpenStack development: UI implementation in horizon (`python` / `django` / `javascript` / `angularjs`)

## 2013 Gihux.com (self-employed)

- Infrastructure research and administration for Majerti
  - `Proftpd`, `ldap`, `ajaxplorer` solution deployment
  - Integration of services with `saltstack`
- UI design and development for `Android` / `iOS` applications with `Kivy`

## 2013 Majerti

- `Pyramid` web development for an in-flight content management system for commercial aircrafts.
  - `Jinja` templating
  - System conception and development
  - `Jquery` frontend development
- Mobile application development using `Kivy`, for alert management.

- Interface conception and development
- `Android` service and UI implementation
- Connection and communication with alert server
- `Android` build and deployment.

## 2011-2012 Tabtou

- `BPMN` 2.0 solution development using `Kivy` / `Python-for-android`
  - Implementation of `BPMN` 2.0 specification
  - User Interface/interaction design and implementation using `Kivy`
  - `UnitTest` system
- `Kivy` core-dev
  - Bezier curves/dashed lines implementation
  - Documentation work/lots of various fixes
  - Extension of recording module for better testing possibilities
- `Python-for-android` (`Kivy`)
  - Add intent-filters support to packages
  - Development of `PyJNIus` as a better way to use `Android` API

## 2009-2012 AlterWay Solutions

- `Redmine` Plugins development and customization to build custom client solutions (`Ruby` / `Rails`)
  - Human Ressources Management interface for Olympus, based on `Redmine`
  - `Redmine` Project Management plugin for Alterway.
  - Prepaid Ticket service for French Ministry contractors, based on `Redmine`
- R&D work on `Kivy`, with contributions, prototype solutions development
  - `GridLayout` port from `PyMT`
  - Various intern showcases for kivy technology
- Website Devolpment using `Python` / `Pyramid`
  - Showroom: application deployment from a web interface
- `AdminProxy`, bastion software, for centralized access management to resources
  - Work on Web interface, lot of fixes
  - Network discovery improvements/fixes
  - Documentation of usage
- Co-authored White Paper "Python: le développement autrement"

- <http://www.alterway.fr/publication/python-le-developpement-autrement>
- Wikinov.org: online index of french business incubators (not on line anymore)
  - Integration fixes

## 2008-2009 Linterweb SARL

- **PHP** developpement for French electricity company (EDF) works concil.
  - Maintenance and evolution of various custom based **PHP** websites and infrastructure solutions.
- **Joomla** Development
  - New features for ABCvert.com (site have been redone since)

## 2006-2007 Equaly SARL

- Work on **ERP** implementation based on ERP5 (**Zope** / **Python**) for the cwdsellier company
  - Implementation of company workflows
  - Creation of invoice production system (pdf)
- Various **PHP** web development

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# Degrees

## 2009-2012

Information System Engineering Master at l'EFREI, Paris (France)

## 2004-2006

Information System BSc (two years) at the University Technology Institute (IUT) of Valence (France)

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# Personnal Projects / Open source contributions

Kivy

I'm a contributor and a core developer to the Kivy project since the early days, and I've contributed a few important things to it, and a lot of less important ones:

- The OscPy project to replace its shipped aging OSC implementation
- Numerous improvements to its SVG implementation
- PageLayout widget
- Garden Widgets:
  - Modernmenu (<https://github.com/kivy-garden/garden.modernmenu>)
  - Magnet (<https://github.com/kivy-garden/garden.magnet>)
  - DDD (<https://github.com/kivy-garden/garden.ddd>)
  - AnimLabel (<https://github.com/kivy-garden/garden.animlabel>)
  - AnimLabel-bezier ([https://github.com/kivy-garden/garden.animlabel\\_bezier](https://github.com/kivy-garden/garden.animlabel_bezier))
- KViewer tool to rapidly iterate design
- CloudPoints, a cloud points widget/viewer based on Kivy and Liblas (<https://github.com/TangibleDisplay/cloudpoints>)
- RoundedRectangle instruction
- A better vim syntax file
- A lot of examples, bugfixes, documentation, mentorship and advocacy for the community.

## OscPy

A fast and modern implementation, of the OSC protocol, supporting python2 and python3, with a good test coverage, and good separation of concerns. <https://github.com/kivy/oscpy>

## Mailsync

A daemon to wrap various email/imap tools to keep local copies of my mails, and have notifications on new mails, and other benefits, while using NeoMutt.

## PythonAR

Python Auto Reloader, can be used for all sort of projects, not just Python, allow to start and restart jobs based on FileSystem events, with a lot of filters to restart only on the right events. under the Kivy organisation

<https://github.com/kivy/pythonar>

## PyJNIus

A `Cython` lib to use `Java` classes directly from `Python`, using `JNI`. Allow to instantiate classes, call their methods, and to implement `Java` interfaces directly from `Python` Classes. In collaboration with Mathieu Virbel, with the `Kivy` organisation <https://github.com/kivy/pyjnius>

## Ultimate-Smash-Friends (2008-2012)

A platform fight game, in `Python`, i moved on to other things now, but to date, my biggest personal project. Got a few contributors, now hosted on Github: <https://github.com/tshirtman/ultimate-smash-friends>

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# Technical Skills

## Expert

- `Kivy`
- `Python`

## Advanced

- `Cython`
- `Git`
- `Linux`
- `Vim`
- `shell` (`sh` / `bash` / `zsh` / `fish` / `xonsh`)
- `Docker` (`docker-compose`)

## Moderate

- `C`
- `Arduino`
- `HTML` / `CSS` / `Javascript` (`Vue`, `JQuery`)
- `Ruby` / `Rails`
- `Networks`

- Java / JNI
- GLSL

## Begginer/Curious

- Haskell
- Lisp
- Go
- Erlang
- R

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## Other Qualifications

### Languages

- French: native
- English: fluent (TOEIC 990)
- Portuguese: beginner

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## Various interests

- Science!
  - History
  - Politics
  - Economics
  - Typography
  - Did i mention Science? well, the other stuff are science too, obviously.
  - Silly stuff that are not Science but that makes life fun too.
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