

Colin Guyon, software engineer



{ UI / Embedded / Connected objects / Robotics / Web Full Stack }

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PROFESSIONAL EXPERIENCE

- **Embedded software engineer, UI and Middleware, Linux, digital TV | Wyplay** 2010 - 2018 (7.5 years)
 - Team working in an agile methodologies context, for worldwide operators: Vodafone, SFR, R, Proximus, CANAL+, SKY, AT&T ...
 - UI tech. leader / Python referent. Conception of a MVC framework and associated tools. Python applications, embedded in set-top-boxes / media-centers. Web applications for some clients (JavaScript / HTML 5 / CSS 3).
 - Middleware development in C/C++, and REST server in Python.
 - Android: AOSP / Java / JNI / PyJnius.
 - Conception, development, maintainance of components. Code reviews, continuous integration ...
 - Version control: Git and Mercurial
- **Engineer application internship (Linux embedded, UI, digital TV) | Wyplay** 2010 (6 months)

Within UI team, optimisation and enrichment of the applicative and graphic framework. Embedded Linux environment, Python language.
- **Software development internship | Ifremer (French research institute for sea exploitation)** 2009 (4 months)

Development of a data management system and aiding of underwater glider remote piloting (Gliders). Python programming, JABBER / XMPP protocol, Linux.

EDUCATION

- 2006 - 2010 **Engineering school | ISEN Toulon, France (Superior Electronics and Numeric Institute)**

2nd year of preparatory class, followed by the engineer curriculum, broad-based to begin, then with a strong informatics and digital electronics orientation.
Final option: Software engineering in information systems.
- 2005 - 2006 **Preparatory class | CIV, France (International Center of Valbonne)**

Superior and applied mathematics, physics, chemistry and engineering sciences.
- 2002 - 2005 Jean Moulin High school (Draguignan) : Scientific Baccaureat (mathematics speciality).

SKILLS

- **Python 2 / 3** and **Cython**: OOP, Embedded Linux, **UI, Web backend** and **REST server (Flask - similar to Django, SQLAlchemy, Jinja, Bottle)**, Kivy, ctypes, PyJnius, pytest, mock, Jupyter Notebook ...
Profiling, optimization, debug, memory leaks tracking, developement of tools ...
- **C / C++** Embedded middleware, UI, microcontrolers. GDB, Valgrind ...
- **JavaScript, HTML 5, CSS 3** Embedded applications and dynamic websites. **ES6, Node.js, React, Babel, Webpack, Express, Stapes, Promise, lodash, jQuery...** and "vanilla" JavaScript.
- **Java** especially **Android applications**
- Graphic design and implementation of graphical user interfaces: **2D & 3D UI** using **Python, C, OpenGL, JOGL, Web FrontEnd, ...**
- **Linux** (working tool that I particularly appreciate, which is also my personal environment)
- **SQL databases** SQLite, MySQL, ... and **NoSQL** MongoDB
- **Git** and **Mercurial**

SKILLS (continuation)

- **Microcontrollers** dsPic, **Arduino** and similar, ESP32 (WiPy), nRF52832 (BLE Nano v2) ... C, C++ or MicroPython.
- **Raspberry Pi** (personal projects using Python / C / Cython).
- **I2C, SPI, UART, PWM, analog** peripherals and sensors: accelerometer, gyroscope, light, temperature, motion (PIR), distance (IR), rotary encoder, capacitive switch, LED driver, servo drive, 7 segments display, **Bluetooth, Bluetooth LE (low energy)**.
- PHP
- Image editing / processing / creation. Good knowledge of Adobe **Photoshop**.
- **English** frequently used at work. TOEIC (885 points) as well as FIRST Certificate of Cambridge (European level: B2) during my engineering curriculum.
- **Agile methodologies**

PERSONAL PROJECTS

- 2018 Portfolio web application using **Node.js / Express / React / ES6** (still ongoing).
- 2018 Website for an agency specialized in engineering of buildings.
JS / HTML 5 / CSS / SVG (Front-End) & **Python / Flask / Jinja2 / SQLAlchemy / SQLite** (Back-End).
- 2018 **Connected photo frame and dashboard** (still ongoing). Raspberry Pi, touch screen, Python, Kivy UI framework. Remote sensors with ESP32 microcontroller (Pycom WiPy 3), MicroPython, Bluetooth LE (low energy).
- 2016 - 2017 **Creation of an interactive lamp**, with brightness management depending on the position of the hand of the user. Arduino (Trinket), C/C++, infrared distance sensor, PIR motion sensor.
- 2016 - 2017 **Creation of a wooden tactile lamp**, with motion sensing. Arduino, C/C++, 3W LED and RVB LED, EEPROM.
- 2015 - 2018 **Creation of a connected luminous alarm clock**, controllable with a smartphone Android app and Bluetooth connection. Wooden casing, 3W LED, digital display, temperature and motion sensors, music player, light beats according to bass/medium/trebles (optimized calculation of FFT in C thanks to GPU_FTT), Bluetooth LE remote actions ...
Python / C / Cython / Android native application / Raspberry Pi
See details on wakepiup.colinguyon.com.
- 2013 Website for an urbanism agency: habitatetsociete.fr. **HTML, CSS, JavaScript, Python backend: Flask, SQLAlchemy, Jinja2.**
- 2010 My new photography website: photo.colinguyon.com. **HTML, CSS, JavaScript, jQuery, AJAX & JSON, PHP 5, SQL database.**
- 2009 **Creation of a RGB lamp with dsPic microcontroller**. Color change by inclination with 3-axis accelerometer, Bluetooth PC connection with a Java software: LED management depending on sound.
- 2009 Website for an urbanism agency: PHP, MySQL, XHTML, CSS, JavaScript, AJAX.
- 2007 My first photography website: colin.guyon.free.fr/photo. XHTML, CSS, JavaScript.

ENGINEERING SCHOOL PROJECTS (ISEN Toulon, France)

- 2009 - 2010 **5th year project**: integration and evolution of a services platform aimed at proposing to the ISEN students web services such as SVN server, wiki, blogs... **Linux environment**. Study and integration of software components, such as Zimbra.
- 2009 - 2010 **Java projects, working in teams**:
 - IRC chat client/server (level 3 CMMI project, team of 5 persons). **Java + OpenGL (JOGL)** UI. Communication protocol based on serialized objects.
 - Paint, web server ...
- 2009 **4th year technical project (5 persons team)**: realization of a **Quadcopter**, controlled by computer using **Bluetooth**. Creation of the **2D + 3D** graphic interface of the control software using **Java + OpenGL (JOGL)**. Live visualization of the orientation of the helicopter with a 3D model. Management of sent/received data.
- 2009 **Project for Junior-ISEN-Toulon**: realization of the multilingual website of a winemaker, using PHP, MySQL, XHTML, CSS, JavaScript and AJAX, with an administration interface: client management, image gallery...
- 2008 - 2009 **Low-level graphical optimization project**. Aim: create a graphical animation in **C + OpenGL**, then optimize it to increase the FPS as much as possible while keeping an identical rendering compared to the non-optimized version. Best project.
- 2008 - 2009 **ISD at the student body government**. Conception and realization of the SBG website (PHP, MySQL, XHTML, CSS, JavaScript, AJAX).
- 2007 **Technical project in electronics (4 persons team)**: realization of a heart beat meter (the usage of a microcontroller being forbidden).
- 2007 **Technical project in informatics (4 persons team)**: realization in **C** of a fish simulation software with predators and baits. Realization of the UI using **2D + 3D OpenGL**, and integration of the modules including the physic engine.

PERSONAL INTERESTS AND LEISURE ACTIVITIES

- Photography: photo.colinguyon.com
- Electronic creations and "DIY", design and objects creations, handy man tasks (especially: wakepiup.colinguyon.com)
- Climbing, windsurfing, sailing
- Sciences, new technologies
- Guitar