
Yann Esposito

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Professional Background

2016 → **Cisco**, Software Engineer, Remote (US team)
2013 → 2016 **Vigiglobe**, Machine Learning & Software Engineer, Sophia Antipolis, France
2010 → **GridPocket**, Co-Founder, Sophia Antipolis, France
2007 → 2013 **AirFrance**, Software Engineer, Sophia Antipolis, France
2006 → 2007 Post Ph.D., Hubert Curien Laboratory, St-Etienne, France
2004 → 2006 ATER (College Degree Teach & Research), Marseille, France
2001 → 2004 University Monitor (College Degree Teach & Research), Marseille, France

Education

2004 CS Ph.D. in Machine Learning at Université de Provence
2001 DEA (Equivalent to Master in Computer science)
2000 Maîtrise in Computer Science
1999 Licence in Computer Science
1998 DEUG MIAS (Math)
1995 BAC S (Math)

Technical Competences

Languages **Haskell, Clojure, Purescript, Javascript**
scheme, C, camL, C++, Ruby, Perl, Java, Python, PHP
Web frontend **Purescript, elm, Clojurescript, Reagent, Angular.js, sass**, etc...
Miscellaneous Shell scripts (zsh, bash), awk, %latex, ConTeXt, %metapost
Auth OAuth2, OpenId Connect

Presentation

I am a senior Software Engineer with a Machine Learning background currently working remotely for an US team in the Security Field for Cisco. More precisely I am part of the API team of SecureX¹. Previously my team delivered Cisco Threat Response². SecureX¹ is a Threat Intelligence product that must integrate with a lot of external products, both in-house and 3rd parties. The API team is recognized for having delivered a high quality product with very few bugs.

I code professionally in Clojure since 2013. I use Haskell and Purescript for most of my personal projects. I started to use Haskell back in 2011. I wrote the article “Learn Haskell Fast & Hard”³ which I recently updated to integrate nix⁴.

Here are some major delivered components for which I am the main developer in my current position:

- An advanced **OAuth2/OIDC provider**,
- a **Login/Invite** component using IdPs (OIDC and SAML),
- a library to generate **structured logs** for our infrastructure,
- a library to expose a **store abstraction** API that could use different DBs (TVar in RAM, Postgres, ElasticSearch, Redis, Riemann...),
- an **Admin UI** and APIs to manage our API in Production,
- **documentations** both internal and public facing⁵,
- a **DB migration** component using high level abstractions.

Also beyond software development I am responsible of:

- Help other teams integrate with our product,
- tutor new member of the team,
- often the first technical person reached out about security concerns,
- plan technical changes about our Auth component

Previously I worked for a social media analytics startup; Vigiglobe. We managed me and another developer to pivot from `node.js` with MongoDB to Clojure with a little bit of Haskell. We created a real time social media analytics SaaS platform using Kafka, Druid, ES. I was also responsible to integrate the machine learning aspect.

¹<http://cs.co/securex>

²<https://www.cisco.com/c/en/us/products/security/threat-response.html>

³<http://yannesposito.com/Scratch/en/blog/Haskell-the-Hard-Way/>

⁴<https://her.esy.fun/posts/0010-Haskell-Now/index.html>

⁵<https://visibility.amp.cisco.com/iroh/doc/iroh-auth/>

Longer details

▷ Public things done

- **Vigiglobe**: architecture able to analyze thousands of social media messages in realtime. In particular, real time Machine Learning & Statistics. Migration from per client to SaaS.
- **YPassword**: iOS application as well as an Elm app (<http://yannesposito.com/YPassword/>)
- **Gridpocket**: web services (from conception to realization, works in correlation with a mobile app)
- **DEES**: a 10.000 line C++ command line program. This program implement most **HMM** standard algorithms & inference algorithms.
- **SeDiL**: a Java application using Swing UI. The goal is to provide biologist an easy way to use an algorithm that generate Similarity Matrices for strings but also for Tree structures. Most graphics was done by me, including the drawing of trees. I didn't used a library for that purpose. - For YPassword ; a Dashboard Widget, a web interface, a command line tool.
- some websites:
 - <https://her.esy.fun>
 - <http://yannesposito.com>
- **Machine Learning Thesis**: <https://www.theses.fr/2004AIX11040>
- **Article in Major International Conferences**: [ICALP 2003], [COLT 2004] & [COLT 2006].
- A lot of other projects see <http://github.com/yogsototh> or my self-hosted git instance <https://gitea.esy.fun/yogsototh>

Research Activies: Publications

<i>International Journal</i>	[Fundamenta Informaticæ, 2008] [Pattern Recognition, 2004]
<i>Internation Conferences</i>	[ECML 2008] [ICGI 2006] [COLT 2006] [COLT 2004] [ICALP 2003] [ICGI 2002]
<i>National Journal</i>	[JEDAI 2002]
<i>National Conferences</i>	[CAp'06] [CAp'04] [CAp'03]

▷ Jobs

Cisco, Software Engineer 2016 →

CTR/SecureX

- Login System
 - OIDC client, SAML client
 - Invitation mechanism
 - Support multiple accounts for the same user identifier from the IdP
 - Support different level of trust, integration between different IdPs
- OAuth2, OIDC
 - support OAuth2 Authorization Code Grant and Client Credentials Grant, supported and deprecated our Implicit Grant
 - support PKCE
 - expose keys via ‘.well-known/jwks’ routes
 - OAuth2 Clients managements
 - Advanced fine grained scope semantic (see scopula⁶)
- Store abstraction
 - very high level but sufficient abstractions (CRUD + Search + Publish + Caches)
 - different DBs only expose a subset of the possible APIs
- Migration Abstraction
 - can use internal code to migrate objects in DB to prevent working at lower DB levels
 - mechanism of backup/rollbacks
- Structured Logs
 - created a component that push to Riemann then after a filter push again to ES and can be analyzed in Kibana.

Vigiglobe, Machine Learning Scientist & Software Engineer 2013 → 2016

Sophia Antipolis, France

Product Scalable Real Time Social Media Analytics Sentiment Analysis Many client side web applications (Angular.js & reagent)

Role Machine Learning Scientist (fast sentiment analysis, learning protocols, etc..) Full stack engineer (backend to frontend architecture)

Technical Keywords: Clojure, Haskell, node.js, reagent, Angular.js, Stream computing

⁶<https://github.com/threatgrid/scopula>

Co-Founder *ℳ* **freelance for GridPocket 2010** →

Sophia Antipolis, France

Product Two API server (one for client, another for administration) A private client side web application An iPhone Application Some Linux boxes to send data to the servers A Linux driver

Role Full technical responsibilities

Technical Keywords: Ruby, REST, JSON, HTML, CSS, Javascript, AJAX, jQuery, Objective-C, ASIHTTPRequest, CorePlot, CoreData, C

AirFrance 2007 →

Consultant

Role In charge of the Airfrance CMS for their website.

Technical Keywords TeamSite, Perl, XML, XHTML, CSS, javascript, JSP, Unix (Solaris/Linux), Bazaar

Environnement Windows (Cygwin), Sun Solaris, Linux

Post Ph.D 10/2006 → *3/2007*

Université Jean Monet, Laboratoire Hubert Curien, Saint-Etienne

Product SeDiL

Role Developer

Details

Java application: *11 000 lines with javadoc*

Main functionalities

- learn edit matrices
- compute edit distances between trees or strings
- visualize trees or sequences (JAVA 2D)
- classification using K means
- Generate random tree couple from an edit distance matrice

Web: <http://labh-curien.univ-st-etienne.fr/SEDiL/>

Research

Similarity measure between strings or XML trees

Contact Marc Sebban

Technical Keywords UML, Java 1.5, Swing, Java 2D, Java Web Start, Applet, subversion, XML, XHTML, PHP

Environnement Mac OS X, Linux (Debian), Windows XP

ATER 10/2004 → 9/2006

Research & Teacher, Université de Provence, Marseille

teach 1/2, research 1/6, C++ development 1/3

DEES ; a C++ software

7500 lines of C++ code, 10.000 with comments

Main functionalities:

- Multiplicity Automata, HMM & PDA Inference,
- Baum Welch & Viterbi Algorithms,
- GraphViz export,
- String Generation from many Models,

Languages C++

API STL

Environment Linux (Debian) & Windows XP

Moniteur des Universités 10/2001 → 9/2004

Université de Provence, Marseille

teach 1/3, research 1/3, C++ Development 1/3

Creation of DEES (see preceding entry).

▷ **Diploma**

2004 | Ph.D. degree in Machine Learning |

2001 | D.E.A. in Computer Science (equivalent to master) |

2000 | Maîtrise d'Informatique |

1999 | Licence in Computer Science |

1998 | DEUG MIAS (math) |

1995 | BAC S (math) |

▷ **Scientific Publications**

- International

Journals | [Fundamenta Inforamticæ vol.86 2008] [Pattern Recognition, 2004]

|

Conferences | [ECML 2008] [COLT 2006] [ICGI 2006] [COLT 2004]

[ICALP 2003] [ICGI 2002] |

Workshop | [TAGI05] |

- National (French)

Journals | [JEDAI, 2003] |

Conferences | [CAP 2006] [CAP 2004] [CAP 2003] |

Thesis | [Université de Provence 2004] |

▷ Projects

Most of my latest programming activities are publicly available at github.com/yogsototh

YPassword 2008 →

Mainly an iOS application:

- YPassword, <http://ypassword.esposito.com>

I've done fully the website from scratch. Also there are some javascript implementation of YPassword tehcnic:

- a Mac OS X dashboard widget,
- a Cappuccino Web application,
- a jQuery Web application,
- a command line tool,
- an Applescript helper

Rubyzome 2009 →

Ruby API oriented framework. Done with Luc Juggery. This framework is REST oriented and output can be either JSON (preferred), but also XML or HTML.

Anonymous Network Project 02/2006 → 06/2006

Made a protocol similar to TOR for student.

Other projects

- Web Application used for private team usage at AirFrance 2008 → This application is just done. Not related to the Airfrance work. But still pleasant. *Javascript(Prototype.js, Scriptaculous), CSS, PHP/MySQL, Google Talk*
- %metapost package to draw Automata 2003 → 2004 %metapost
- Mac OS X Screensavers (YClock & YAquaBubbles) 2003 → 2004 *Objective-C, Quartz Composer, Cocoa*

You could find even more information by looking at:

- My personnal website(s):
 - <https://her.esy.fun>
 - <https://yannesposito.com>
 - <http://yann.esposito.free.fr>
- My github account: <http://github.com/yogsototh>