

# Martín Vuelta

SOFTWARE DEVELOPER · RESEARCHER

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## Summary

Co-founder and Director of Development and Technology Research at SoftButterfly.

I like science and I am always looking for the best way to solve theoretical, experimental and technical problems through the application of computer science to achieve a better understanding of the world.

## Experience

### SoftButterfly

Lima, Peru

CO-FOUNDER AND DIRECTOR OF DEVELOPMENT AND TECHNOLOGY RESEARCH

Feb. 2017 - PRESENT

- Development of an eLearning with Django, Wagtail, Django RestFramework, NextJS, React y PostgreSQL for the Ministry of Culture of Peru in collaboration with Crehana and HackSapce.
- Quantum Variational Eigensolver for ground state energy determination in small molecules.
- Design and development of a system for the diagnosis, registration and monitoring of COVID-19 tests for the Repromedic clinic.
- Development of an eCommerce with Django, Django RestFramework, VueJS and PostgreSQL for Quimder.
- Research and development of tools for the migration of dashboards from DataDog to New Relic and its use in New Relic One.
- Installation of New Relic APM and Infrastructure agents in conjunction with Atentus for Interbank systems.
- New Relic instrumentation in conjunction with Atentus for the Interbank BPI website in VueJs.
- New Relic implementation in conjunction with Atentus for Sura's internal management systems.
- Development of an eLearning platform with Django, Wagtail, Bootstrap and PostgreSQL.
- Development of a survey generator and analysis system with Django, Django RestFramework, VueJS and PostgreSQL.
- Infrastructure implementation of internal SoftButterfly systems using various tools from the AWS stack.
- Research and development of meteorological stations using commodity hardware and a customized IoT system with Django, Django RestFramework, Bootstrap and PostgreSQL.
- Research for the development of a monitoring and recovery system for meteorological balloons.
- Research for the development of a mosquito characterization system by the frequency of its flutter.

### National Service of Meteorology and Hydrology of Perú - Senamhi

Lima, Peru

EXTERNAL FORTRAN CONSULTANT

Nov. 2017 - May. 2018

- Fortran Training
- Development of data analysis programs.

### HackSpace Perú

Lima, Perú

LEAD TRAINER

Jan. 2015 - Dec. 2019

- Full stack web development coach at the PADT 2017 (High Technological Performance Program) in collaboration with the Ministry of Production of Peru.
- IoT coach of the CoreUpgrade 2017 face-to-face training.
- Backend development coach of the CoreUpgrade 2016 face-to-face training.

### HackSpace Perú

Lima, Perú

LEAD SOFTWARE DEVELOPER

Mar. 2016 - PRESENTE

- Planning, design, development and implementation of the entire web infrastructure of HackSpace Peru.
- Implementation of e-Learning system for the CoreUpgrade 2017 annual training program.

### Grupo RPP

Lima, Perú

WEB DEVELOPER FREELANCE

Ago. 2017 - Sep. 2017

- Development of interactive web visualizations using GreenSock, D3JS and HighCharts.
  - Las cifras del caos.
  - El viaje de la papeleta..
  - Las víctimas mortales.
  - Cinco años de tragedias.

### DGT Digital

Lima, Perú

IT SECURITY AND WEB DEVELOPMENT CONSULTANT WITH PYTHON

Feb. 2017 - Mar. 2017

- Web development training backend with Python and Django.
- Computer Security Training following the OWAS Standard to improve the security of your computer systems.
- Training of use and configuration of Nginx and SSL.

## UnionLabelNet

DYNAMICS NAV DEVELOPER

Lima, Perú

Dic. 2016 - Mar. 2017

- ERP system developer with Microsoft Dynamics NAV.
- Development of the VSCode C-AL plugin to improve the efficiency in Microsoft Dynamics NAV C-AL programming.

## HackSpace Perú

SOFTWARE DEVELOPER

Lima, Perú

Nov. 2015 - Nov. 2016

- Frontend development of HackSpace web services.
  - Promotional Website for Community Training 2015
  - Promotional Website for the CoreUpgrade 2016

## National Aerospace Research and Development Commission - Peru Space Agency

RESEARCH ASSISTANT TRAINEE

Lima, Perú

Apr. 2014 - Dec. 2015

- Research on algorithms for solar activity forecasting.
- Development of meteorological monitoring systems.
- Automation calculation of ephemeris.

## DJEngineering

SOFTWARE DEVELOPER

Lima, Perú

Jul. 2015 - Jul. 2016

- Support and development of features in backend and frontend of web systems.

## Skills

<b>Programming</b>	Python, C, C++, C#, Fortran, Matlab, Mathematica, JavaScript, LaTeX, Java, Julia, Kotlin
<b>Libraries</b>	LAPACK, BLAS, Intel MKL, ILNumerics, OpenCV, Cuda, OpenGL, SFML
<b>Hardware</b>	Arduino, Raspberry Pi
<b>Mobile</b>	Android
<b>Web</b>	Wagtail, Django, Flask, Express, HTML5, CSS3, SASS, Gulp
<b>Databases</b>	MySQL, MariaDB, PostgreSQL, Redis, SQLite
<b>Cloud</b>	Amazon Web Services, Google Cloud Platform, IBM Bluemix
<b>Languages</b>	Español, Inglés

## Studies

### Universidad Nacional Mayor de San Marcos

Lima, Perú

B. S. EN FÍSICA

Mar. 2008 - Feb. 2021

## Cursos

### Qiskit Global Summer School

Online, Global

IBM

Jul. 2020

- Certificate of Quantum Excellence

### The SCOSTEP/ISWI ISSS

Lima, Perú

INSTITUTO GEOFÍSICO DEL PERÚ

Sep. 2014

### Programación Científica con MatLab

Lima, Perú

LABORATORIO DE FÍSICA DE EVENTOS NATURALES

Ene. 2013

### 5th School of Cosmic Rays and Astrophysics

La Paz, Bolivia

UNIVERSIDAD MAYOR DE SAN ANDRÉS

Ago. 2012

### CETQ-Fermilab School QCD and Electroweak phenomenology

Lima, Perú

PONTIFICIA UNIVERSIDAD CATÓLICA DEL PERÚ

Jul. 2012 - Ago. 2012

## Ponencias

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### Basic security measures for servers

Universidad Privada del Norte,  
Lima, Perú  
Jun. 2017


I FORUM OF TECHNOLOGIES AND ENTREPRENEURSHIP

- Practical guides for configuring security headers for web servers with emphasis on nginx.

### Cellular Automata with Python

Universidad Privada del Norte,  
Lima, Perú  
May. 2017


CODE DAY

- On how I deepened my interest in cellular automata after watching the video "I'm humanity" by Etsuko Yakusimaru. Practical examples of cellular automata made in Python.
-  Github: <https://github.com/zodiacfireworks/code-day-2017--cellular-automata>

### Jupyter Notebook: An Interactive Programming Environment

Universidad Privada del Norte,  
Lima, Perú  
May. 2017


FLISOL LIMA

- About the use of Jupyter notebook in teaching and in advanced real-work environments. Practical examples in mathematics and data analysis with Spark.
-  Github: <https://github.com/zodiacfireworks/talk--jupyter-notebook>

### Fedora, Python y Arduino

Puno, Perú  
Oct. 2016


FUDCON: FEDORA USERS AND DEVELOPERS CONFERENCE

- On how to build a desktop application with Python and Qt for the collection of data from various sensors connected to an Arduino board.
-  Github: <https://github.com/zodiacfireworks/arduino-serial-monitor>

### High performance computing with Python

Universidad de Piura, Piura, Perú  
Ago. 2016

XXIII INTERCON INTERNATIONAL CONGRESS OF ENGINEERING, ELECTRONICS, ELECTRICAL AND COMPUTING

- Introductory workshop to high performance computing in Python.
-  Github: <https://github.com/zodiacfireworks/talk--jupyter-notebook>

### Algoritmos computacionales para el análisis de actividad solar.

Lima, Perú  
Jul. 2015

ENCUENTRO CIENTÍFICO INTERNACIONAL

### Solar cycle forecasting.

Cusco, Perú  
Sep. 2014

X CONFERENCIA LATINOAMERICANA DE GEOFÍSICA ESPACIAL

## Reconocimientos

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|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 2016 | <b>6to Lugar</b> , II Programming Contest - IEEE Brain Coding 1.5                                                                                                                           | Perú       |
| 2015 | <b>Reconocimiento</b> , For participation in the event "Creating, Innovating: Technological solutions for a more representative congress" organized by the Congress of the Republic of Peru | Lima, Perú |
| 2014 | <b>Microsoft Active Professional</b> , Microsoft                                                                                                                                            | Lima, Perú |