

Leopoldo Pla Sempere

SOFTWARE ARCHITECT · PART-TIME LECTURER

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Experience

Part-time lecturer

UNIVERSITY OF ALICANTE

San Vicente del Raspeig

Oct. 2019 - present

- Teaching in **Mathematics and Computer Science** degrees
- Programming algorithmic fundamentals and advanced techniques for software specification
- Use real-world examples and challenges from Google, Amazon, Microsoft, and Spotify.

Innovation projects engineer

GRUPO ENERCOOP

Crevillent

Nov. 2023 - present

- Lead engineer in **Energy Production and Transition** area, managing EU funded innovation projects:
 - **InEEsS**: Innovative Energy (Efficiency) **Service Models** for Sector Integration.
 - **MODERATE**: Marketable **Open Data Solutions** for Optimized Building-Related Energy Services.
 - **STREAM**: Creating an innovative and robust **flexibility ecosystem** on the low voltage (LV) grid side of existing power markets.
 - **COMMUNITAS**: Bound to accelerate the roll-out of energy communities and **empower consumers**
- Furthermore, participating in nationally and regionally funded projects:
 - **DIGIRED-IA**: digital twin and **intelligent management tools** for electrical distribution networks based on **artificial intelligence**.

Senior Data Scientist, Music Information Retrieval and Machine Learning engineer

UNIVERSITY OF ALICANTE

San Vicente del Raspeig

Jun. 2023 - Nov. 2023

- Lead developer in **MultiScore** project, training neural models to learn both OMR and AMT holistically (end-to-end) for transcribing music

Senior Data Scientist, Natural Language Processing and Machine Learning engineer

UNIVERSITY OF ALICANTE

San Vicente del Raspeig

Nov. 2017 - Jun. 2023

- Lead developer and coordinator of **software Work Packages in EU funded projects (CEF)**, in coordination with
 - University of Edinburgh, Prompsit, TAUS, Omniscien and Johns Hopkins University:
 - * **ParaCrawl** (Provision of Web-Scale Parallel Corpora for Official European Languages)
 - * **Paracrawl 2** (Broader Web-Scale Provision of Parallel Corpora for European Languages)
 - * **Paracrawl 3** (Continued Provision of Web-Scale Parallel Corpora for European Languages) (paracrawl.eu)
 - University of Groningen, Jožef Stefan Institute, Prompsit:
 - * **MaCoCu**: Massive collection and curation of monolingual and bilingual data: focus on under-resourced languages (macocu.eu)
- My work focused on **creating parallel corpora** for EU official languages **by a broad web crawling effort**.
- Coordinated the development of the **Open Source Machine Learning based suite Bitextor** (bash, python, C++, snakemake, awk...), the production-ready tool that merges the technology pipeline for these CEF projects, run under **HPCC and Cloud scale**.
- 6 people team under my supervision, in **Agile** environments.
- Cloud resources provided by **Amazon (AWS S3), Microsoft (Azure) and Docker**.
- OS and system administration of various Linux-based systems (Scientific Linux, Ubuntu, Fedora, Debian)

Data Scientist, Natural Language Processing and Machine Learning engineer

PROMPSIT LANGUAGE ENGINEERING

Elche

May 2015 - Oct. 2017

- Developing natural language related projects as Reverso Context, processing full range of corpora and language resources
 - developed for Reverso (Softissimo, approx. rank 250 in Global Similarweb Ranking)
 - **several million page-views per day**, big data Cloud scale computing, from an Agile development team
 - using technologies as SVN, pandas, jupyter, bash (UNIX tools), word2vec, keras, scipy and Apache Solr

Full-stack developer intern

PROMPSIT LANGUAGE ENGINEERING

Elche

Feb. 2013 - May 2013

- Developing an internal news sentiment analysis suite
- Python and bash scripting for news crawling and plain text extraction from all downloaded HTML data
- AJAX, jQuery, CSSv3 and PHP for real-time interactive interface for dataset generation, MySQL for dataset storage

Education

M.Sc. Artificial Intelligence, Pattern Recognition and Digital Imaging, GPA: 8.81/10

POLYTECHNIC UNIVERSITY OF VALENCIA

Valencia

Sep. 2014 - Jun. 2015

- M.Sc. specialised in **natural language processing and deep learning**
- Coursed machine learning MOOCs of Andrew Ng (Stanford University) and Yaser Abu-Mostafa (Caltech)
- Master Thesis: Audio classical composer identification in MIREX 2015: submission based on Structural Analysis of Music

B.Sc. Computer Science, GPA: 8.53/10

UNIVERSITY OF ALICANTE

San Vicente del Raspeig

Sep. 2010 - Jun. 2014

- B.Sc. specialised in Informatics (robotics, machine learning, artificial vision, compilers)
- **Enrolled in the group of high profile academics programme**
- Diploma Thesis: Dodecaphonic music composer assistant with OpenMusic

Publications & Awards

Building Domain-specific Corpora from the Web: the Case of European Digital Service Infrastructures

LREC 2022

van Noord et al.

Marseille, France

June, 2022

MaCoCu: Massive collection and curation of monolingual and bilingual data: focus on under-resourced languages

EAMT 2022

Bañón et al.

Ghent, Belgium

June, 2022

ParaCrawl: Web-Scale Acquisition of Parallel Corpora

ACL 2020

Bañón et al.

Online

6 July, 2020

Computer Science Degree graduation and M.Sc scholarship

BEST ACADEMIC RECORD

University of Alicante, Generalitat Valenciana

San Vicente del Raspeig

2015

B.Sc thesis defense

HIGHEST MARK (OUTSTANDING WITH HONORS)

University of Alicante

San Vicente del Raspeig

2014

Presentation & Associations

EAMT

WEBMASTER FOR THE EUROPEAN ASSOCIATION OF MACHINE TRANSLATION

- Technical role managing services as eamt.org, lists.eamt.org, mt-archive.net and several EAMT congress websites

Remote

July 2021 - Present

DockerCon 2022

PRESENTER FOR <THE BITEXTOR PIPELINE>

- Introduced the Bitextor pipeline and explained its uses with Docker

Remote

May, 2022

Docker Community All-Hands #4 2021

PRESENTER FOR <THE BITEXTOR PIPELINE>

- Introduced the Bitextor pipeline and explained its uses with Docker, including a live demo

Remote

Dec. 2021

Skills

Natural Language Processing tools

Moses, Marian, Bleualign, Bitextor, Bicleaner

Scripting and tools

git, CMake, tmux, Python, Lisp, Bash, AWK, Perl, systemd

Machine Learning Toolkits

TensorFlow, Keras, PyTorch, HuggingFace, pandas, sklearn, numpy, scipy, matplotlib

Programming

C++, C, Java, Golang, JAVA, Rust, LaTeX, CMake, Snakemake

Languages

English (proficient), Spanish (native), Catalan (native)

Extracurricular Activity

Clarinet Professional degree

PROFESSIONAL CONSERVATORY OF MUSIC OF ELCHE

- Specialized in jazz improvisation with Miguel García Ferrer
- MOOCs on jazz improvisation with Gary Burton (Berklee School of Music) and fundamentals of rehearsing music ensembles with Dr. Evan Feldman (University of North Carolina at Chapel Hill)
- After studies, performed in several youth orchestras, symphonic wind orchestras and rock, pop, swing and jazz bands, writing arrangements, improvising, both playing clarinet and piano as soloist. Non-professional experience with saxophone, guitar, ukulele, bass, and drums.

Elche

Sep. 2004 - Jun. 2010

Hardware-related projects

SELF-TAUGHT

- Open source PCB layout design using EAGLE and KiCad, with real production in factories as OSHPark and JLCPCB, for 80s computers (GB, C64).
- Electronic repairs and coding on vintage video-game platforms. "Best sound" award at "Retroconsolas Alicante 2013" for the Amstrad CPC 464.
- Open source 3D design (Autodesk), modelling and printing. Volunteer with "3D Makers Elche" group during COVID-19 lockdown by 3D-printing more than two hundred facemasks for near hospitals.