ALFREDO ALARCON Y.

Lead Tech AI & Bioinformatics

@ a.alarcon.y@gmail.com +33 6 86 16 56 09 Grenoble, France Age 34 years old Nationality Chilean / French

DESCRIPTION

Scientific Engineer **with 9-year experience in Data Science and Web Development**. Interested in innovation, multidisciplinarity and continuous learning. Please visit my website for more information about my professional background - **http://alfredoalarcon.com**.

EXPERIENCE

Lead Tech - Artificial Intelligence

Neovision

From 2021 Grenoble, France

- Deep Learning methods applied to medical 3D imaging and time series.
- Development of data parsing and treatment pipelines from input raw data as well as visualisation interfaces using python and web technologies.
- Training of colleages in deep learning and web technologies

Technical Leader

Cisco

2020 Remotely from Grenoble, France

- Development of visualisation tools for exploratory data analysis and machine learning using web technologies.
- Unsupervised Machine Learning : Dimensionality Reduction (PCA, UMAP, t-SNE), Clustering (hierarchical, kMeans).

Bioinformatics Team Leader

Global Bioenergies

2017 – 2019 Evry, Paris region, France

- Foundation of a new activity in bioinformatics, data science and web development in a Biotechnology company.
- Development and deployment of a whole web application useful for processing, analysis and visualisation of most scientific data of the company.
- Modelling and analysis of genomics and transcriptomics data, which led to the discovery of new genes and metabolic pathways. One patent on it.
- Management and training of one collaborator. Vulgarisation of data analysis and web development among biologist colleagues.

Transportation Data Analyst

Systra

2013 – 2016 Marseille, France

- Analysis of geographical, transportation and poll data in order to forecast demand for a public transportation system in a regional or national context (*Transportation networks analysis*).

EDUCATION

Engineer - *Ingénieur de l'Ecole Polytechnique*

Ecole Polytechnique (X2008)

December 2012 Palaiseau, France

MSc Biotechnology - *Systems and Synthetic Biology*

Université Paris-Saclay

January 2016 Evry, France

MSc Economics and Public Policies

Sciences Po - Ecole Polytechnique

December 2012 Paris, France

SKILLS

- **Programming**: python, javascript, C#, java, R
- **Data Analysis**: pandas, sklearn, tensorflow, pytorch
- **Data Visualisation**: matplotlib, d3, plotly
- **Backend**: django, flask, nodeJS (express)
- **Frontend**: typescript, react, threeJS, tensorflowJS
- **Hybrid**: electronJS, react native
- **DB**: postgreSQL, mongoDB, elasticsearch
- **DevOps**: docker, git, vagrant, ssh
- **Bioinformatics**: clustalo, rdkit, biopython, blast, hmmer, cobra

LANGUAGES

English, French, Spanish
German

SELECTED PROJECTS

Automated Dental Diagnosis with Deep Learning

- DL on 3D point clouds were used to segmentate teeth and gingiva from raw 3D data.
- Captures of mandible movements allowed for diagnosis of dental pathologies.
- Hybrid interface with animated 3D data used for presentation of results to main public.

Time Series Forecasting with Deep Learning

- Training of a DL model taking into account dynamic as well as static data allowed for automated forecast of time series coming from industrial environments.

Web Development Workshop in India

- I taught a 28-hour workshop about frontend web technologies: HTML, CSS, JS and React to students from Mahindra Ecole Centrale in Hyderabad, India.

Development and Deployment of a Scientific Full-Stack Web Application

- The application simplifies the retrieving and visualisation of biochemical data.
- Structured into SQL data from heterogenous sources (HPLC, mass spectrometry, gaz chromatography, ...) as well as DNA/Protein sequences.

Development of a Mass Spectrometry Data Analysis Pipeline.

- Tool is capable of detecting relevant features (Machine Learning) and identifying them comparing fragmentation spectra from raw data and *in-silico* spectrum prediction.

Gene Research with Sequence Analysis.

- Several homologues with reinforced activity found in public and private databases using sequence comparison.

Chemoinformatics Reactions Database and an Enzyme Promiscuity Prediction tool.

- Biochemical reaction databases were fused with structural data from chemical databases. *Atom-atom mapping* was computed in order to predict potential undesirable reactions.

Metabolic Network Modelling.

- Analysis of complex networks modelling the relations between genes, proteins, molecules and proteins inside the cell. Main conclusions led to publication of one patents.