IVÁN VALLÉS PÉREZ

Ph.D. at University of Valencia and Sr. Applied Scientist at Amazon AGI, with 10 years of industry experience. **Looking for a Research Scientist position**.

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WORK EXPERIENCE

05.2023 - Present | Senior Applied Scientist at Amzon AGI | Cambridge, UK
· Tech lead of global multimodal LLM design and implementation.
· Tech lead of the Alexa low-latency speech generation LLM. Leading the research and supporting productionization.
· Lead team of up to 6 scientists and various cross-organization collaborations.

09.2020 - 05.2023 | Applied Scientist at Amzon AGI | Cambridge, UK
· Leading research on probabilistic modelling of found speech data.
· Worked with normalizing flows, GANs, diffusion models, LLMs, and other deep learning generative models.

04.2019 - 09.2020 | Senior Data Scientist at Amazon Supply Chain Science | Luxembourg, Luxembourg
· First team member, in charge of bringing the (deep) ML expertise to EU Supply Chain teams.
· Designed a Machine learning model to forecast the daily inbound demand at warehouse level for all EU.
· Built a Deep Reinforcement Learning algorithm for improving speed through inventory proactive transfers.

06.2013 - Present | AI Researcher at Intelligent Data Analysis Laboratory (UV) | Valencia, Spain
· Involved in several research lines related to low-resource Deep Learning algorithms.

06.2016 - 02.2019 | Senior Data Scientist at McKinsey & Company | Madrid, Spain
· Developed machine learning solutions for more than 10 clients around the globe belonging to 5 different industries.
· Developed 5 customer-ready applications using state-of-the-art Deep Learning techniques.
· Lead teams up to 10 data scientists and data engineers.

11.2014 - 06.2016 | Lead Data Scientist at Quarizmi AdTech | Valencia, Spain
· Used Machine Learning and NLP techniques to generate and maintain digital marketing campaigns in Google Adwords.

05.2014 - 11.2014 | Data Scientist at Psychology department of University of Valencia | Valencia, Spain
· Analysis and machine learning modeling of data coming from clinical psychology studies.

EDUCATION

2018-2023 | Ph.D. in low resource Deep Learning | University of Valencia, Spain
2016-2018 | M.Sc. Languages and Computer Science Systems (NLP) | UNED, Spain
2009-2013 | B.Eng. Electronics of Telecommunications | University of Valencia, Spain
... +30 machine-learning related courses and specializations from Coursera, EdX, Udacity, etc.

PROJECTS AND RELEVANT ACHIEVEMENTS

02.2023 | Contributions & applications to low resource deep learning | Ph.D. thesis | Unanimous cum laude
· Scientific contributions to deep learning with limited resources. Link: ir.uv.es/ivape3/phd
· Conducted on partial time, while working full-time.
06.2018 | Generative Adversarial Networks for text generation | M.Sc. thesis | Mark: 4/4
· Language Modeling using GANs. Link: ir.uv.es/ivape3/tfm
11.2012 | Application of Genetic Algorithms to Extreme Learning Machine | B.Eng. thesis | Mark: 3.7/4
· Alternative to backpropagation for training shallow neural networks. Link: ir.uv.es/ivape3/pfc
Open Source Contributions to machine learning related projects
· Contributed open source Python libraries in GitHub: *Tensorflow*, *Scikit-Learn*, *Pandas*, *XGboost*, *SomPy*, ...
· Developed *Somnia* library implementing Self-Organising Maps in Python. Available in my GitHub.
Kaggle competitions: BNP: 22nd/2947 | Santander recommender: 22nd/1787 | SpringLeaf: 76th/2225.

SKILLS

Coding: Python (Pytorch, Tensorflow, MxNet, Stable Baselines and Ray+RLLib), Rust, Bash, Godot, R, Matlab, LaTeX, C++, Git & Mercurial, Docker, etc.
Data: SQL, Apache Spark, sed & awk.
Cloud & distributed: AWS, Google Cloud, Distributed computation, Microsoft DeepSpeed.
Languages: native in Spanish and Catalan. Professional proficiency in English.

Referees, references, recommendation letters and additional information will be provided upon request.

PEER-REVIEWED PUBLICATIONS

2023 | SCRAPS: Speech Contrastive Representations of Acoustic and Phonetic Spaces , *European Conference on Artificial Intelligence,*I. Vallés-Pérez, G. Beringer, P. Bilinski, G. Cook, R. Barra-Chicote

2023 | Empirical study of the modulus as activation function in computer vision applications, *Engineering Applications of AI*, I. Vallés-Pérez, E. Soria-Olivas, M. Martínez-Sober, A. J. Serrano-López, J. Vila-Francés, J. Gómez-Sanchís

2022 | Stutter-TTS: Controlled synthesis and improved recognition of stuttered speech , *Neural Information Processing Systems*, X. Zhang, I. Vallés-Pérez, A. Stolcke, C. Yu, J. Droppo, O. Shonibare, R. Barra-Chicote, V. Ravichandran

2022 | Approaching sales forecasting using recurrent neural networks and transformers, *Expert Systems with Applications*, I. Vallés-Pérez, E. Soria-Olivas, M. Martínez-Sober, A. J. Serrano-López, J. Gómez-Sanchís, F. Mateo

2021 | End-to-end Keyword Spotting using Xception-1d, *European Symposium of Artificial Neural Networks*, I. Vallés-Pérez, F. Mateo, J. Vila-Francés, A. J. Serrano-López, E. Soria-Olivas

2021 | Improving multi-speaker TTS prosody variance with a residual encoder and normalizing flows, *InterSpeech*, I. Vallés-Pérez, J. Roth, G. Beringer, R. Barra-Chicote, J. Droppo

2014 | Visual Data Mining With Self-Organizing Maps for "Self-monitoring" Data Analysis, *Sociological Methods & Research*, E. Oliver-Gasch, I. Vallés-Pérez, R.M. Baños-Rivera, A.J. Cebolla-Martí, C. Botella-Arbona, E. Soria-Olivas

2014 | Self-Organizing Maps (SOM) in the analysis of EMAs in a treatment for childhood obesity treatment, *International Society for Research on Internet Intervention (ISRII)*, R. Baños, E. Oliver, A.J. Cebolla, I. Vallés, E. Soria, C. Botella

OTHER PUBLICATIONS

2024 | Enhancing the Stability of LLM-based Speech Generation Systems through Self-Supervised Representations , *arXiv preprint,*A. Martín-Cortinas, D. Sáez-Trigueros, I. Vallés-Pérez, B. Tura-Vecino, P. Biliński, M. Lajszczak, G. Beringer, R. Barra-Chicote, J. Lorenzo-Trueba