CV Date	05/09/2023

Part A. PERSONAL INFORMATION

First Name	Unai		
Family Name	Garciarena Hualde		
Sex	Male	Date of Birth	22/09/1992
ID number Social Security, Passport			
URL Web	https://unaigarciarena.github.io/		
Email Address	unai.garciarena@ehu.eus		
Open Researcher and Contributor ID (ORCID)	0000-0003-2425-8340		

A.1. Current position

Job Title	Lecturer		
Starting date	2022		
Institution	Universidad del País Vasco		
Department / Centre	Arquitectura y Tecnología de Computadores / Facultad de informática		
Country	Spain	Phone Number	(0034) 943015083
Keywords	330403 - Arithmetic and machine instructions; 330406 - Computer architecture; 330413 - Data transmission devices		

A.2. Previous positions (Research Career breaks included)

Period	Job Title / Name of Employer / Country
2021 - 2022	CTO / Trantor MKT
2017 - 2021	PhD student / Universidad del País Vasco

A.3. Education

Degree/Master/PhD	University / Country	Year
Programa Oficial de Doctorado en Ingeniería Informática	Universidad del País Vasco	2021
Master's degree on Computational Engineering and Intelligent Systems	University of the Basque Country	2016
Bachelor's degree on Computer Engineering	University of the Basque Country	2015

Part B. CV SUMMARY

Unai Garciarena received his bachelor degree in Computer Science in 2015, and his masters degree in Computational Engineering and Intelligent Systems in 2016, before obtaining the Ph.D. degree in 2021, all from the University of the Basque Country (UPV/EHU).

While he pursued his bachellors degree, he took part in the IKD-GAZtE initiative, in which he carried out projects with multidisciplinary groups of students from other majors, as psichology, nursing, social work, architecture, or law. These projects involved agents of different characteristics, ranging from technical groups (e.g., Tecnalia spin-off companies), to social associations (e.g., Gureak, a company devoted to generate job opportunities to people with disabilities).

During the period of the thesis studies, his research was oriented towards efficiently discovering optimal structures in Deep Neural Network models, a research field knwon as NAS; particularly exploiting evolutionary algorithms (Neuroevolution).

After completing his Ph.D. studies, he worked in a company along with a team of marketing professionals, in which he designed AI-based applications oriented towards improving the efficiency of marketing campaigns in social networks, such as Facebook-Meta, or Google.

Currently, his research lines adapt the knowledge obtained during his Ph.D studies involving efficient NAS strategies, to a lower abstraction level, in which the implementation of these algorithms in hardware platforms that allow a deeper level of efficiency in terms of energy consumption.

B.1. Brief summary of the Undergraduate Thesis (or equivalent) and score obtained

It consisted of the development of an ontology that could fit the metadata available on several research repositories. Additionally, a non-relational database system was designed, along with a simple interface, which allowed performing relatively complex queries involving the previously refferenced repositories.

B.2. Brief summary of the Master's Thesis and score obtained

The study of the interaction between missing data, imputation methods, and supervised classification methods. It involved the identification (and definition) of missing data types, a simple categorization of imputation methods, and a sizeable number of classification algorithms. In the extensive study several standar databases were used, and the obtained conclusions were applied to a real-world time-series database consisting of water quality records.

Part C. RELEVANT ACCOMPLISHMENTS

C.1. Most important publications in national or international peer-reviewed journals, books and conferences

AC: corresponding author. (nº x / nº y): position / total authors. If applicable, indicate the number of citations

1. **Scientific paper**. Garciarena, U. (AC); Santana, R.; Mendiburu, A.(1/3). 2023. Redefining Neural Architecture Search of Heterogeneous Multinetwork Models by Characterizing Variation Operators and Model Components. IEEE Transactions on Neural Networks and Learning Systems. IEEE. Early Access, pp.1-15.
2. **Scientific paper**. Garciarena, U. (AC); Mendiburu, A.; Santana, R.(1/3). 2021. Towards automatic construction of multi-network models for heterogeneous multi-task learning. Transactions on Knowledge Discovery from Data. Association for Computing Machinery (ACM). 15-2, pp.33.
3. **Scientific paper**. Garciarena, U. (AC); Santana, R.; Mendiburu, A. (1/3). 2020. Analysis of the transferability and robustness of GANs evolved for Pareto set approximations. Neural Networks. Elsevier Ltd.. 132, pp.281-296.
4. **Scientific paper**. Garciarena, U. (AC); Santana, R.(1/2). 2017. An extensive analysis of the interaction between missing data types, imputation methods, and supervised classifiers. Expert Systems with Applications. Elsevier. 89, pp.52-65. ISSN 0957-4174. Google Scholar (18)

C.2. Conferences and meetings

1. Santana, R.; Hidago-Cenalmor, I.; Garciarena, U.; Mendiburu, A.; Lozano, J.. Neuroevolutionary algorithms driven by neuron coverage metrics for semi-supervised classification. The Genetic and Evolutionary Computation Conference, GECCO 2023. Association for Computing Machinery. 2023. Portugal. 'Participatory - poster. Conference.
2. Garciarena, U.; Vadillo, J.; Mendiburu, A.; Santana, R.. Adversarial Perturbations for Evolutionary Optimization. International Conference on Machine Learning, Optimization, and Data Science. 2021. United Kingdom.

3 Esnaola, I.; Garciarena, U.; Bermúdez, J.. Semantic Technologies Towards Missing Values Imputation. IEA/AIE 2021: Advances and Trends in Artificial Intelligence. Artificial Intelligence Practices. Springer. 2021. Malaysia.

4 Garciarena, U.; Lourenço, N.; Machado, P.; Santana, R.; Mendiburu, A.. On the exploitation of neuroevolutionary information. GECCO '21: Genetic and Evolutionary Computation Conference. Association for Computing Machinery. 2021. France. 'Participatory - poster. Conference.

5 Garciarena, U.; Santana, R.; Mendiburu, A.. EvoFlow: A Python Library for Evolving Deep Neural Network Architectures in Tensorflow. 2020 IEEE SYMPOSIUM SERIES ON COMPUTATIONAL INTELLIGENCE. Institute of Electrical and Electronics Engineers (IEEE). 2020. Australia.

6 Garciarena, U.; Mendiburu, A.; Santana, R.. Envisioning the Benefits of Back-Drive in Evolutionary Algorithms. 2020 IEEE Congress on Evolutionary Computation (CEC). Institute of Electrical and Electronics Engineers (IEEE). 2020. United Kingdom. Conference.

7 Garciarena, U.; Mendiburu, A.; Santana, R.. Automatic Structural Search for Multi-task Learning VALPs. International Conference on Optimization and Learning. Universidad de Cádiz. 2020. Spain.

8 Garciarena, U.; Santana, R.; Mendiburu, A. Evolved GANs for generating Pareto set approximations (Nominated for Best Paper Award in the Evolutionary Machine Learning track)). Genetic and Evolutionary Computation Conference (GECCO 2018). Association for Computing Machinery (ACM). 2018. Japan. Participatory - oral communication. Conference.

9 Garciarena, U.; Santana, R.; Mendiburu, A. Expanding variational autoencoders for learning and exploiting latent representations in search distributions. Genetic and Evolutionary Computation Conference (GECCO 2018). Association for Computing Machinery (ACM). 2018. Japan. Participatory - oral communication. Conference.

10 Garciarena, U.; Santana, R.; Mendiburu, A.. Analysis of the Complexity of the Automatic Pipeline Generation Problem. 2018 IEEE Congress on Evolutionary Computation (CEC). Institute of Electrical and Electronics Engineers (IEEE). 2018. Brazil. Conference.

11 Garciarena, U.; Santana, R.. Evolutionary optimization of compiler flag selection by learning and exploiting flags interactions (GI workshop 2016 Best Paper Award). Genetic and Evolutionary Computation Conference (GECCO 2016). Association for Computing Machinery (ACM). 2016. United States of America. Participatory - oral communication. Conference.

12 Garciarena, U.; Santana, R.. Analyzing the interplay between transferable GANs and gradient optimizers. Participatory - oral communication. Conference.