Francisco **Carrillo Pérez**

PhD student · Bioinformatics

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Edu**cation**

University of Granada *Granada, Spain*

PhD in Bioinformatics *Oct 2019 - PRESENT*

- Working on the integration of multiple sources of biological information for cancer classification.

Deepmind *Milano, Italy*

Mediterranean Machine Learning School *Jan 2021 - Jan 2021*

- Lectures and laboratories taught by local and international AI experts. Topics: Computer vision, Natural Language Processing, Generative models, Meta/Multitask learning, Graphnet ,(Deep) reinforcement learning, Robotics, Bayesian and causal inference, Applied deep learning (E.g., healthcare, physics, weather) – *Web*

University of Granada *Granada, Spain*

MSc Data Science and Computer Engineering *Oct 2018 - Jul 2019*

- **Msc Thesis:** Classification of Ultra-High Energy Cosmic Rays – *Code*

University of Granada *Granada, Spain*

Bachelor of Science in Computer Science *Sep 2013 - Mar 2018*

- **Politecnico di Milano**, Milano, Italy — *Erasmus+ Scholarship 2016-2017*
- **BSc Thesis:** Deep Learning applied to biomedical imaging – *Code*

Exp**erience**

University of Granada *Granada, Spain*

Predoctoral Researcher *Nov 2019 - PRESENT*

- Predoctoral researcher in the CASIP group. Applying **Deep Learning** and **Machine Learning** to biological data (image and non-image based), making use of different sources of information.
- Analysis of **RNA-Seq, Microarray, miRNA and histological imaging** data and their integration for cancer classification.

mDurance - eHealth Intelligent Solutions *Granada, Spain*

Data Scientist *Sept 2017 - Mar 2019*

- Principal developer of a novel section segmentation algorithm over sEMG data.
- Optimization of backend features.

Pub**lications**

Journal Articles

- **F. Carrillo-Perez**, L.J. Herrera, J.M. Carceller & A. Guillén. *Deep Learning to Classify Ultra-High Energy Cosmic Rays by means of PMT signals*. **Neural Computing And Applications**. 1-18. `https://doi.org/10.1007/s00521-020-05679-9`. **23/137-Q1**
- Daniel Castillo Secilla, Juan Manuel Gálvez, **Francisco Carrillo-Perez**, Marta Verona-Almeida, Francisco Manuel Ortuno, Luis Javier Herrera, Ignacio Rojas. *A Smart Gene Expression Pipeline For Extracting Relevant Biological Knowledge using Machine Learning Techniques*. **Computers in Biology and Medicine**. **Under Review**
- Durand, L. B., Ruiz-López, J., Perez, B. G., Ionescu, A. M., **Carrillo-Pérez, F.**, Ghinea, R., & Pérez, M. M. (2020). *Color, lightness, chroma, hue, and translucency adjustment potential of resin composites using CIEDE2000 color difference formula*. **Journal of Esthetic and Restorative Dentistry**. 1–8. `https://doi.org/10.1111/jerd.12689`. **45/91-Q2**
- Molina-Molina, A., Ruiz-Malagón, E. J., **Carrillo-Pérez, F.**, Roche-Seruendo, L. E., Damas, M., Banos, O., & García-Pinillos, F. (2020). *Validation of mDurance, a wearable surface electromyography system for muscle activity assesment*. **Frontiers in Physiology**, 11, 1556. **20/81-Q1**
- Pérez, M. M., Bona, A. D., **Carrillo-Pérez, F.**, Dudea, D., Pecho, O. E., & Herrera, L. J. (2020). *Does background color influence visual thresholds?* **Journal of Dentistry**, 103475. `https://doi.org/10.1016/j.jdent.2020.103475`. **10/91-Q1**
- Herrera, L.J., Todero Peixoto, C.J., Baños, O., Carceller, J.M., **Carrillo, F.**, Guillén, *A. Composition Classification of Ultra-High Energy Cosmic Rays*. **Entropy** 2020, 22, 998. **33/85-Q2**
- Pérez, M. M., Herrera, L. J., **Carrillo, F.**, Pecho, O. E., Dudea, D., Gasparik, C., & Della Bona, A. (2019). *Whiteness difference thresholds in dentistry*. **Dental Materials**, 35(2), 292-297. **4/91-Q1**
- Perez, M. M., Ghinea, R., Herrera, L. J., **Carrillo, F.**, Ionescu, A. M., & Paravina, R. D. (2018). *Color difference thresholds for computer⊠simulated human Gingiva*. **Journal of Esthetic and Restorative Dentistry**, 30(2), E24-E30. **45/91-Q2**

Conference Articles

- Morales, J. C.*, **Carrillo-Perez, F.***, Castillo-Secilla, D., Rojas, I., & Herrera, L. J. (2020, May). Enhancing Breast Cancer Classification via Information and Multi-model Integration. In International Work-Conference on Bioinformatics and Biomedical Engineering (pp. 750-760). Springer, Cham.
- **Carrillo-Perez, F.**, Herrera, L. J., Carceller, J. M., & Guillén, A. (2019, June). Improving Classification of Ultra-High Energy Cosmic Rays Using Spacial Locality by Means of a Convolutional DNN. In International Work-Conference on Artificial Neural Networks (pp. 222-232). Springer, Cham.
- **Carrillo-Perez, F.**, Diaz-Reyes, I., Damas, M., Banos, O., Soto-Hermoso, V. M., & Molina-Molina, A. (2018). A Novel Automated Algorithm for Computing Lumbar Flexion Test Ratios Enhancing Athletes Objective Assessment of Low Back Pain.

Book Chapters

- Maldonado, L. J. H., **Pérez, F. C.**, Gómez, M. D. M. P., & Della Bona, A. (2020). Future Developments Using Artificial Intelligence (AI) in Dentistry. In Color and Appearance in Dentistry (pp. 135-142). Springer, Cham.

Skills

Languages	Spanish **Mother Tongue**, English **C1**, Italian **B2**
Programming Languages	Python, R, C++
Frameworks	Pytorch, Tensorflow, Scikit-Learn, Pandas, Numpy, Django

Projects

Knowseq R/Bioc Package *Repository*

Core Developer

- Pipeline for a **Transcriptomic gene expression analysis** including a **Machine Learning toolbox**.
- Transcriptomic RAW data processing, Biomarkers identification & assessment, DEGs enrichment methodology and Intelligent Automatic Report.