

Enrique Frias-Martinez

CONTACT INFORMATION

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SUMMARY

With over 15 years of experience in the forefront of AI research and application, my academic pursuits have been dedicated to the development, refinement, and implementation of pioneering AI-based solutions. My expertise extends to design of curriculum and courses for AI and ML, and teaching both online and in person. I have consistently integrated the principle of "learning by doing" into both my teaching and research practices. This approach underpins my pedagogical methods, where I emphasize hands-on projects, collaborative research, and the application of theoretical knowledge in real-world settings. By fostering an interactive learning environment, I encourage students to engage directly with materials, technologies, and problems, thereby facilitating a deeper understanding of the concepts. My work not only demonstrates a profound understanding of AI's practical applications but also contributes to the theoretical foundations of the field, bridging the gap between academic research and real-world impact.

SKILLS

Machine Learning (supervised and unsupervised), Python, Scikit-learn, XGBoost
Temporal Series Analysis, Prophet, AutoARIMA
Deep Learning, PyTorch, LSTM, CNN, LLMs, OpenAI API, LangChain, RAG
AI/ML Course Design, AI/ML curriculum Design
Applications: Medical Image, Socioeconomic predictions, AI in telco, AI in Education.

CURRENT POSITION

Research Institute for Innovation in Education(UNIR-iTED), Madrid **June 2023 -**
Director of the IBM Chair on Data Science in Education, Principal Researcher

Leading research, design and implementation in AI and GenAI applied to Education. Design and research in LLMs, RAGs and chatbots as student tutors. Design and deployment of AI tools: student abandonment, student assistance prediction, student personalization of learning, LLMs for personalization. Management of EU projects.

PREVIOUS PROFESIONAL EXPERIENCE

Universidad Camilo Jose Cela (UCJC), Madrid, Spain **April 2021 - June 2023**
Director of the Master in Artificial Intelligence at UCJC

Professor, School of Computer Science. Focusing on AI, ML, Applied Machine Learning (supervised and unsupervised approaches) and Temporal Series Analysis. Proficient in delivering both online and traditional courses. Designed the MSc degree in AI/Data Science from scratch.

Telefonica Digital (Telefonica I+D), Madrid, Spain **April 2008 - March 2021**
Senior Applied Researcher, Core Innovation, AI Research Group

Lead research, prototyping and alpha versions in AI user-centered products including mobility, user modelling (gender, socioeconomics, age, points of interest, routes), AI for social good and urban computing. Manage focused groups of engineers, and PhDs for the creation of new services. AI evangelist for the Telefónica Group. Co-creation of new products with business units and/or transfer algorithms and results to the business groups. Patenting new methods. Presenting to the media and other third parties (public institutions, international agencies) the results and social benefits of AI. Projects:

AI for IoT and Telco Networks - Client: TEF Tech Designed LSTM for identification of network status for maintenance prediction. Designed clustering techniques (GMM, SOM, spectral) for anomaly detection and behavioral modeling of Movistar Car.

Advanced Socioeconomic and Unemployment Prediction I developed cutting-edge ML models aimed at predicting socioeconomic levels and unemployment rates for both geographical areas and individuals. Prediction accuracy up to 90%. Systems were integrated into personalization platform, enhancing Telefónica's marketing strategies.

COVID19 Models - Client: LUCA Telefonica Data Unit Used mobility data from cell phone traces to run epidemiological models for prediction of the evolution of the pandemic. Results offered to the SEDIA as part of the Telefonica offer.

Drives - Client: Intrapreneurship product for Car Insurance

Created a risk estimation model for drivers based on speed, points of interest, routes, acceleration and deceleration built on top of standard risk model to improve risk scoring. The model identified 5% more extra risky drivers.

Tourists Estimation - Smart Steps O2 UK

Estimation and prediction of number of tourists based on the roaming information of the network, including origin, areas of visits, time of stay.

University of California, Los Angeles (UCLA) , CA, USA **Sep 2006 - March 2008**
Graduate Student Researcher, Biomedical Engineering Department
Quantification of MR Spectroscopy cerebral metabolites using Machine Learning.

Brunel University, London, UK **Sep. 2003 - Sep. 2006**
AHRB Research Fellow, Department of Information Systems and Computing (DISC)
Research leader in a project that modeled user behavior with Machine Learning techniques when interacting with digital libraries. Personalization of the interaction using psychological traits.

New York University (NYU), New York City, NY, USA **Sep. 2001 - Sep 2003**
MEC-Fulbright Postdoctoral Researcher.
Courant Institute of Mathematical Sciences, Department of Computer Science.
Leading research in AI, ML and user modeling for improving user experience for web interaction.
Prediction of pages and topics of interest to optimize user experience.

EDUCATION	<p>University of California, Los Angeles (UCLA), Los Angeles, CA Dec. 2007 M.Sc. Biomedical Engineering. GPA 4.0. Biomedical Engineering Department.</p> <p>Universidad Politecnica de Madrid, Madrid, Spain Dec. 2001 Ph.D.(Doctor) in AI, Highest Honors “ Cum Laude” • Best Ph.D. Thesis Award School of Computer Science 2001</p>
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PUBLICATIONS	<p>Metrics (as of October 2023) Number of Publications: 125, Total number of citations (google scholar): 5197 h-index: 37, i-10 index: 67 Google Scholar profile: https://scholar.google.com/citations?user=R3GAd3sAAAAJ</p>
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PATENTS	<p>Number of Patents: 13, List: http://enriquefrias-martinez.info/patents</p>
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MEDIA	<p>Media apperances and Interviews: https://enriquefrias-martinez.info/media</p>
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