José FERRER VILLENA
35 years old/Married
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Deep Learner

SKILLS

IMAGE/SIGNAL PROCESSING
Image enhancement, segmentation, registration, compression, computer vision and digital signal/image processing.

ARTIFICIAL INTELLIGENCE
Random forest, Bayesian Clustering, SVM, Deep Learning (CNN, RNN and GAN) and Reinforcement Learning.

MEDICAL SYSTEMS
Expert using DICOM, HL7, IHE, FHIR, XDS and XML. Developer of EHR, RIS and PACS.

TECHNICAL

Python, Go, Matlab, C++, C, Java, JAvascript
Tensorflow, Pytorch, Keras, scikit-learn, scikit-image, SciPy, ITK/VTK, OpenCV, React JS
IoT: Arduino, Raspberry, Firebase
DCMTK, DCM4CHEE, Git, Docker, MirthConnect, FHIR.

EDUCATION

Master in Sciences, Technology and Health
2009 - 2010 UNIVERSITÉ D'ORLÉANS, FRANCE

Bachelor in Electronic Engineer
2002 - 2008 PONTIFICIA UNIVERSIDAD CATÓLICA DEL PERÚ, PERÚ

WORK EXPERIENCE

2019 - Now **Universidad Peruana Cayetano Heredia**
Lima, Perú
LABORATORY AND COURSE SETUP
Implementation of biomedical image/signal processing and machine learning courses and laboratory. Consultant for biomedical data acquisition kits, frameworks/libraries for data processing, thesis proposal and research.

2013 - 2017 **Medical Innovation & Technology S.A.C.**
Lima, Perú
RESEARCH & DEVELOPMENT MANAGER
Prototypes: IoT, Cloud Computing, Artificial Intelligence, Image Processing and Compression. SCRUM, System Architecture, Design Thinking, Technological Resilience and Start-up Management.

2012 - 2013 **PONTIFICIA UNIVERSIDAD CATÓLICA DEL PERÚ**
Lima, Perú
DEVELOPER
Research and developer of diabetic foot ulcers detection based in thermal Images and BI-RADS Mammography Compose classification.

2018 - Now **Informática Médica Perú**
Lima, Perú
RESEARCH, DEVELOPER & FOUNDER
Trainer in DICOM, HL7, Machine Learning (deep learning) , development of Medical Imaging APIs, Chief Technology Officer in development projects in medical systems using agile methodologies and design thinking.

2011 **Institute Prisme**
Orléans, France
IMAGE PROCESSING DEVELOPER
Volumetric and Morphological Brain difference based in MRI between normal and trisomy-21 mice.

2008 - 2009 **Philips Peruana**
Lima, Perú
COMMERCIAL & TECHNICAL ASSISTANT
Guarantees, Modalities Installations and training.

TEACHING

Universidad Peruana Cayetano Heredia
2019 - 2020 Biomedical Design Innovation Project 1
Introduction to Biomedical Signals

Pontificia Universidad Católica del Perú
2013 - 2017 Biomedical Image Acquisition and Digital Processing

2014 - 2017 Biomedical Data Acquisition

2017 Health Technology Management

2018 - 2019 Biomedical Innovation Project 1
Biomedical Innovation Project 2

SERVICE

Paper Reviewer
2019 LatinX in AI Research at NeurIPS

2014 - 2019 Latin American Engineering in Biomedical Congress (CLAIB)

Consultant
2017 Evaluation of National Health Service EHR

2017 - 2018 Development of biomedical engineering syllabus at PUCP

Project Formulation
2013 - 2017 Innovation and scientific peruvian funded

COURSES

Comprehensive DICOM
OTECH
Texas, EE.UU., 2016

Quantum Mechanics
Stanford & MIT (Stanford online & edx)
Lima, Peru, 2014 - 2015

Physic of Medical Images
Pontificia Universidad Católica del Perú
Lima, Peru, 2007

Introduction to HL7
OTECH
Texas, EE.UU., 2016

Start-Up Management
HEC Paris (Coursera)
Lima, Peru, 2015

fMRI
Instituto de Alta Tecnología Médica
Medellín, Colombia, 2015

PUBLICATIONS

- Fonseca, P., Mendoza, J., Wainer, J., Ferrer, J., Pinto, J., Guerrero, J., & Castaneda, B. (2015, March). Automatic breast density classification using a convolutional neural network architecture search procedure. In SPIE Medical Imaging (pp. 941428-941428). International Society for Optics and Photonics.
- Casado, F. L., Manrique, S., Guerrero, J., Pinto, J., Ferrer, J., & Castañeda, B. (2015, March). Characterization of breast density in women from Lima, Peru. In SPIE Medical Imaging (pp. 94161B-94161B). International Society for Optics and Photonics.
- Angulo, A., Ferrer, J., Pinto, J., Lavarello, R., Guerrero, J., & Castaneda, B. (2015, January). Experimental assessment of an automatic breast density classification algorithm based on principal component analysis applied to histogram data. In Tenth International Symposium on Medical Information Processing and Analysis (pp. 92870E--92870E). International Society for Optics and Photonics.
- Almhdie-Imjabber, A., Ferrer-Villena, J. M., Harba, R., Lédée, R., Léger, C., Lopes-Pereira, P., & Même, S. (2012). Segmentation of mice cerebral structures: application in Trisomy 21. International Journal of Innovative Computing and Applications 17, 4(3-4), 214-222.
- Ferrer J., Castañeda B., Chaumont T., Garra G., Garra K., Stephens K., Jacobo S., Waks E., Miele F., Stewart P., Fernandez I., Campos M., Trujillo L., Guerrero J., Garra B. New Tele-Diagnostic Model Using Volume Sweep Imaging for Rural Areas, EMBC 2017.

PROJECT DEVELOPED

Funding by Ministry of Production, Peru

- Development of PACS/RIS system designed for telemedicine applied in narrow bandwidths in rural areas.
- Development of vital signs monitor using Tablet and telemedicine platform with IoT environment.
- Telemedicine system for US imaging for rural areas with narrow bandwidth and volume sweeps acquisition protocols.
- Automation of cervical spine technique in MRI for time reduction and post-process standardization.

Funding by President of the Council of Ministers, Peru

- Modular Telemedicine system with image compression and IoT capability for telemonitoring for narrow bandwidth.
- Development of system to control and diagnose pre-ulcers based on thermography and machine learning.

LANGUAGE

Spanish:	Native
French:	Fluent
English:	Proficient

HOBBIES & ACTIVITIES

- Online education
- Football
- Music
- Reading
- Cooking
- Video Games