

Juan Francisco **López Luna**

MSc ELECTRICAL ENGINEER · BIOELECTRONICS

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A MSc in bioelectronics with a strong scientific background and significant entrepreneur experience. Founded a tech company and developed end-to-end projects implementing innovative technologies into both new and old processes exceeding clients expectations. Associate professor of biomedical instrumentation and mentor of research projects in an academic institution. Passionate about research and technological innovation.

Professional Experience

Vitenskap

Mexico city, Mexico

FOUNDING PARTNER

2017 - Actual

- Client approach, project assessment, process mapping and exploratory diagnose for new clients
- Project management of an interdisciplinary group to provide end-to-end solution for clients
- Back-end and front-end web applications development and maintenance
- Documentation production attached to regulations and client requirements
- Firmware development for LoRa devices, manufacturing process with 3D printers and PCB assembly
- Software and web apps development for IoT and infrastructure installation for LoRa networks using LoRaWAN protocol

ACHIEVEMENTS

- Infrastructure, hardware and software development of the initial demo of an IoT people tracker project developed for the local government of Colima, Mexico; leading to initial investment of \$40,000 USD
- Lead negotiations accomplishing a contract for a solution for an oncologic and parenteral nutrition mix center management system and project management from conception to deployment and maintenance worthing \$50,000.

Universidad La Salle

Mexico city, Mexico

ASSOCIATE PROFESSOR

2014-Actual

- Academic projects mentoring and thesis advisor
- Coordination of student internships in Mexico city hospitals
- Associate professor teaching advanced biomedical instrumentation courses
- Development of biomedical instrumentation courses oriented to medical diagnostics, therapeutics and research

ACHIEVEMENTS

- Developed biomedical instrumentation courses with labs
- Coordinated obligatory hospital internships for 15 students among private hospitals and National Health Institutes; management of the projects developed by students with the heads of biomedical engineer departments
- Advised the undergraduate degree dissertation of 2 students and mentored research projects of more than 15 students leading one of them to be accepted to undertake a summer research internship in the University of New Mexico

Instituto Nacional de Cancerología (National Cancer Institute)

Mexico city, Mexico

RESEARCH INTERNSHIP

2012

- Trained in equipment and laboratory instrumentation
- Supported in MicroPET-SPECT-CT image acquisition during experimental protocols, image reconstruction and analysis
- Supported experimentation in different research projects from the Medical Physics and Molecular Imaging Department

ACHIEVEMENTS

- Granted a research scholarship from the head of the research group
- Worked in a research project on radiopharmaceuticals production for breast cancer detection through PET-SPECT-CT that produced a patent

Education

MITx

Online through edX

MACHINE LEARNING WITH PYTHON-FROM LINEAR MODELS TO DEEP LEARNING

2020

- Certificate: <https://courses.edx.org/certificates/9bf714f0b34e484a820461484a6a5626>

Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional - CINVESTAV

Mexico city, Mexico

MSC IN ELECTRICAL ENGINEERING WITH SPECIALTY IN BIOELECTRONICS

2013 - 2015

- GPA: 9.3 (Maximum 10) - 2nd highest
- **Research subject:** optimization of the delivered energy by a double slot applicator for breast cancer treatment through microwave ablation: modeling by FEM, phantom characterization, validation of the models in phantoms, in vitro and in vivo experimentation

Universidad La Salle

Mexico city, Mexico

B.S. IN BIOMEDICAL ENGINEERING

2008 - 2012

- GPA: 9.2 (Maximum 10) - 1st in class

Developed Courses & Publications

Biomedical measurements I & II

Universidad La Salle, Mexico

ASSOCIATE PROFESSOR

Actual

- Biomedical instrumentation, static characteristic of medical instrumentation, biomedical sensors, acquisition and analog-to-digital conversion of bioelectric phenomena, ECG instrumentation, discrete Fourier analysis of the ECG signal obtained, development and characterization of a portable ECG based heart rate monitor, biomedical arterial pressure instrumentation, volume instrumentation for a brachytherapy system, instrumentation development for a research purpose

Publication

LEAD AUTHOR

March 2015

- López, J.; Leija, L.; Vera, A., "Development of fabrication method for a phantom emulating breast tumor tissue for percutaneous antenna coupling measurements in microwave thermotherapy", Pan American in Health Care Exchanges (PAHCE), 2015, pp.1-4, 23-28 March 2015

Technical Skills

Software Matlab, LaTeX, Python, Javascript, PHP

Data Neural networks for biological signals processing (ECG and EMG), implementation using Matlab and tensorflow

Experimental Experience handling cell cultures and animals for experimentation purposes

Firmware [Assembly and C/C++] for microcontrollers and DSP, [VHDL] for FPGA, [C/C++ and Linux bash] for ARM

Modeling COMSOL Multiphysics for modeling electromagnetic radiation interaction with biological tissue

Languages

Spanish Native

English Highly proficient - TOEFL iBT score: 108

Honors & Awards

2013 **Miguel Febres Cordero Award**, highest GPA in biomedical engineering at Universidad la Salle

Mexico

2013 **Academic Excellence Award**, from the National Engineering Schools and Faculties Association

México

2016 **Premio Indivisa Manent**, granted by the students at Universidad La Salle to the best qualified professor

Mexico