Dr. Fernando Eleazar García Ramírez

Querétaro, Mexico

30/12/1989 (35 years old) | Single | linkedin.com/in/dreleazargarcia/
eleazar12garcia@gmail.com | +52-442-179-6577

PROFILE

Doctor in engineering with hands-on experience in optical coherence tomography (OCT) systems. Strong programming skills in mathematical simulations, data processing and 3D image reconstruction and analysis with MATLAB. Broad experience in instrumentation of experimental systems with LabVIEW. Effective communication skills in international congresses. His main interests are the research, development and commercialization of medical technology.

WORK EXPERIENCE

Centro de Física Aplicada y Tecnología Avanzada (CFATA) — **Querétaro, Mexico**
Research assistant — *January 2023 - April 2024*

Supervisor: Prof. Remy Fernand Ávila Foucat.
Description: Simulations in MATLAB of the diffraction patterns produced by a shock wave, as those used in lithotripsy, for visualization and characterization purposes.

EDUCATION

Université Bourgogne-Franche-Comté (UBFC) — **Besançon, France**
Doctor in Engineering Sciences — *September 2017 - June 2022*
PhD performed at FEMTO-ST (Franche-Comté Electronique Mécanique Thermique et Optique – Sciences et Technologies) Institut. Relevant modules include: Microfabrication Technology.
Thesis title: "Integration and study of a MOEMS-based endomicroscopic system for early detection of gastrointestinal cancers by SS-OCT" (Available at: https://theses.hal.science/tel-03884705/).
Supervisors: Dr. Sylwester Bargiel, Prof. Philippe Lutz, Prof. Christophe Gorecki.

The University of Nottingham (UoN) — **Nottingham, United Kingdom**
MSc in Bioengineering: Imaging and Sensing — *September 2015 - September 2016*
(*Graduated With Merit*)
MSc focused on the use of optics and engineering in the development of medical technology. Relevant modules include: Biomedical Optics, Imaging Principles and Technology, Functional Medical Imaging, Bioelectronic and Biophotonic Interfacing, Biosensing, Medical device regulation and Cell and Human structures for Engineers.
Dissertation title: "High-contrast stereomicroscopy for precision dissection of *Drosophila larvae*"
Supervisors: Dr. Kevin Webb, Prof. Stephen Morgan.

Universidad Nacional Autónoma de México (UNAM) — **Querétaro, Mexico**
Bachelor in Technology — *August 2008- December 2014*
Bachelor focused on the formation of technologists with knowledge in physics, mathematics, chemistry, biology, engineering and computer sciences, being able to work effectively in multidisciplinary projects. Relevant modules include: Optics, Instrumentation, Signal Processing, Probability and Statistics, Biology, Biophysics, Electronics, Microcontrollers, Dynamics of Physical Systems, Electromagnetic Theory and Organic Chemistry.
Thesis title: "Theoretical development for the characterization of a shock wave because of its effect in the refractive index field of a flow" (Available at: https://ru.dgb.unam.mx/handle/20.500.14330/TES01000723900).
Supervisor: Prof. Remy Fernand Ávila Foucat.

RESEARCH INTERNSHIPS

International Centre for Translational Eye Research (ICTER) **Warsaw, Poland**
Research internship *September 2020*
Implementation of an endoscopic probe (PhD project) in an OCT system with a high speed swept source.

12th NAMIS (Nano and Microsystems) International School **Seattle, United States**
Autumn School *September 2018*
Autumn school entitled "Micro and Nano Engineered Systems for Augmented Humanity" held at the University of Washington, where conferences about synthetic biology, photonics, neurosciences and global health were attended.

Centro de Física Aplicada y Tecnología Avanzada (CFATA) **Querétaro, Mexico**
Research internship *January - March 2015*
I was employed to implement an optical system to visualize shock waves, as those used in extracorporeal lithotripsy systems, using a high-speed scientific camera. This work corresponds to the experimental phase of my undergraduate thesis where I performed the theoretical analysis.

Unidad de Resonancia Magnética **Querétaro, México**
Social service *February - August 2013*
I elaborated a manual which describes how to perform an MRI study. It was done to be used by students and researchers in the unit and includes security measurements and software and hardware operation.

PUBLICATIONS

- **Fernando E. García-Ramírez**, Achim M. Loske and Remy Ávila, "Simulations of the optical diffraction patterns produced by the pressure field of a clinical shock wave source" *Phys. Scr.* 99, 095020 (2024)
- Sylwester Bargiel, **Fernando Eleazar Garcia Ramirez**, Jean-Loup Skora, Quentin Tanguy, Olivier Gaiffe, Phillipe Lutz, Jean-Marc Cote, Christophe Gorecki "3-D micro-assembly approach to fabrication of a scanning MOEMS-based endoscopic probe for Optical Coherence Tomography imaging" in *International Symposium on Optomechatronic Technology*, Nov 2021, Besançon, France.
- **F. E. García-Ramírez**, S. Bargiel, O. Gaiffe, Q. A. A. Tanguy, P. Struk, J. Cote, N. Passilly, P. Lutz, C. Gorecki, and H. Xie, "Characterization of an integrated MOEMS scanning probe towards real-time Lissajous-based SS-OCT imaging for endoscopic applications" in *Biophotonics Congress: Biomedical Optics 2020 (Translational, Microscopy, OCT, OTS, BRAIN)*, OSA Technical Digest (Optica Publishing Group, 2020), paper OTu4E.5.
- P. Struk, S. Bargiel, Q. A. A. Tanguy, **F. E. Garcia Ramirez**, N. Passilly, P. Lutz, O. Gaiffe, H. Xie, and C. Gorecki, "Swept-source optical coherence tomography microsystem with an integrated Mirau interferometer and electrothermal micro-scanner" *Opt. Lett.* 43, 4847-4850 (2018)

PRESENTATIONS

- F. E. García Ramírez, S. Bargiel, O. Gaiffe, Q. A. A. Tanguy, P. Struk, J-M Cote, P. Lutz, H. Xie and C. Gorecki, "SS-OCT probe with a Mirau micro interferometer and a 2-axis electrothermal micro-mirror scanner for endoscopic applications", *Conf. International Industrialization Potential of Optics in Biomedicine(i-POB)*, Poland, 07-08/10/2020 (online due to pandemic).
- F. E. García-Ramírez, S. Bargiel, O. Gaiffe, Q. A. A. Tanguy, P. Struk, J-M Cote, N. Passilly, P. Lutz, C. Gorecki and H. Xie, "Characterization of an integrated MOEMS scanning probe towards real-time Lissajous-based SS-OCT imaging for endoscopic applications", *Conf. International Biophotonics*

Congress: Biomedical Optics 2020 (Translational, Microscopy, OCT, OTS, BRAIN), 20-23/04/2020, Fort Lauderdale, USA (online due to pandemic).

- F. E. García Ramírez, P. Struk, Q. A. A. Tanguy, S. Bargiel, N. Passilly, O. Gaiffe, P. Lutz and C. Gorecki "Integration of a micromachined endomicroscope for OCT imaging in gastroenterology", 12th NAMIS (Nano and Microsystems) International School, 10-14/09/2018, Seattle, USA

SCHOLARSHIPS AWARDED

- CONACYT (Consejo Nacional de Ciencia y Tecnología) scholarship. 12-month scholarship effective from October 01,2015 to September 30,2016.

SOFTWARES

- MATLAB
- LabVIEW
- C++
- R
- OpenSCAD (3D printing)
- Microsoft Office (Word, Excel, Power Point)
- LaTeX
- PIC C
- MPLAB
- Altium Designer

LANGUAGES

- Spanish (first language) ■■■■■
- English (advanced) ■■■■□
- French (intermediate) ■■■□□
- German (basic) ■□□□□