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Languages: Spanish, English.

Academic qualifications

Aug 2019 – May 2023

Universidad Nacional Autónoma de México (UNAM)
Bachelor's degree in Electrical-Electronic Engineering (B.Eng.) – GPA: 9.09/10 (3.9/4).
Thesis Advisor: Gabriel Eduardo Sandoval Romero PhD.
Thesis title: "Implementation of a sensor-device based on the Michelson interferometer in open space to detect imperfections in flat reflective surfaces."

Research contributions

1. E. Morales, A. Pérez, F. Velázquez, and G. E. Sandoval-Romero, "Determination of the Refractive Index in Transparent Solid Objects Using the Michelson Interferometer," in *Proc. SOMI XXXVII Instrumentation Congress*, Bogotá, Colombia, Nov. 2023.

2. E. Morales, A. Pérez, F. Velázquez, and G. E. Sandoval-Romero, "Implementation of a sensor device based on the Michelson interferometer for the detection of imperfections in flat reflective surfaces," in *Proc. Second Interdisciplinary Student Congress ICAT 2024*, Mexico City, Dec. 2024.

3. E. Morales, "Implementation of a sensor device based on the Michelson interferometer for the detection of imperfections in flat reflective surfaces" B.Eng. thesis, Dept. of Electrical and Electronic Engineering, National Autonomous University of Mexico, Mexico City, Mexico, 2024.

Research experience

King Abdullah University of Science and Technology (KAUST)

Jan 2024 – Mar 2024
KAUST Solar Center. Ultrafast Dynamics Group. Visiting Student Research Program.
Advisor: Jose Jurado PhD.
Country: Saudi Arabia
Research: Development of an ultra-fast amplifier using a network of 6 Gallium Nitride High-Electron-Mobility-Transistors (GaN-HEMT) Transistors, which can reach detection speeds of up to 60 pico-seconds (DC-30 GHz Bandwidth).

Nov 2023 – Jan 2024
KAUST Solar Center. Ultrafast Dynamics Group. Visiting Student Research Program.
Advisor: Jose Jurado PhD.
Research: Manufacturing of organic solar cells with active layer of P3HT:PCBM and characterization using Solar Simulator, characterization with PAIOS.

Sep 2023 – Nov 2023
KAUST Solar Center. Ultrafast Dynamics Group. Visiting Student Research Program.
Professor: Frédéric Laquai PhD.
Research: Design and improvement of setup to measure the sensitive External Quantum Efficiency (sEQE) of organic solar cells creating a routine through LabVIEW. Complete automation of the setup, possibility of performing measurements remotely.

Institute of Applied Sciences and Technology (ICAT) UNAM

Aug 2022 – May 2023
Department of Electrical Engineering applied to Instrumentation. Laboratory of Fiber Optic Sensors
Professor: Gabriel Eduardo Sandoval Romero. PhD.
Country: Mexico
Research: "Implementation of a sensor-device based on the Michelson interferometer in open space to detect imperfections in flat reflective surfaces" (bachelor's degree thesis topic).

Aug 2022 – Jan 2023
Department of Electrical Engineering applied to Instrumentation. Laboratory of Fiber Optic Sensors
Professor: Gabriel Eduardo Sandoval Romero. PhD.
Research: Implementation of the Michelson interferometer in open space to determine refractive indices in different transparent solid materials. Presented in instrumentation congress in Bogotá Colombia SOMI XXXVII.

Jul 2022 – Nov 2022
Department of Electrical Engineering applied to Instrumentation Laboratory of Fiber Optic Sensors
Professor: Abraham Perez Alonzo. MS.
Research: Implementation of a control circuit for a laser diode, power supply and protection against high voltages.

Jul 2022 – Dec 2022
Department of Electrical Engineering applied to Instrumentation Laboratory of Fiber Optic Sensors
Professor: Gabriel Eduardo Sandoval Romero. PhD
Research: Experimental instrumentation of a system based on the Michelson Interferometer to measure small displacements caused by mechanical vibrations.

Facultad De Estudios Superiores Aragón UNAM

Jan 2022 – May 2022
Department of Instrumentation. Aragon Technology Center.
Professor: Edgar Alfredo Gonzalez Galindo. MS.
Country: Mexico
Research: UV control device for the care of plants in a hibernator to regulate the amount of UV rays received by the plants.

Official certification

Photovoltaic Design. KAUST Solar Center, Saudi Electric Services Polytechnic (SESP).

Database and website design. Colegio de Ciencias y Humanidades (CCH) Naucalpan. Universidad Nacional Autónoma de México.

Course Data Analysis Basics: Data, data, everywhere. Google and Coursera.

Honors & Awards

Scholarship for High-Achieving Graduates UNAM (2024-2025).

Visiting Student Research Program KAUST (2023-2024).

Support PAPIIT 104123 project thesis UNAM (2022-2023).

Academic Excellence Scholarship UNAM (2021-2022).

Maintenance Scholarship UNAM (2019-2020).

Programming Languages

C++/C	Java	Javascript	Python	HTML	Matlab

Software management

Labview	Fusion 360	Freecad	Origin	Ultimaker cura	Kicad
Multisim	Proteus	Fluidsim	DialuxEvo	Microchip studio	ExtremeBurner

Conferences, Courses & Workshops

Introduction to Scientific Visualization with Vislt Workshop. KAUST.

Introduction to Machine Learning. KAUST.

Introduction to Deep Learning. KAUST.

Introduction to Data visualization. KAUST.

Basic PCB Prototyping, Design and Fabrication. KAUST.

Course control an Electrical device from your cell phone (Internet of things). DGTIC UNAM, Mexico. (Speaker).

SOMI XXXVI Keynote Conference, Instrumentation Congress "Sliding Modes of the 21st Century".

Volunteer Work

Event “Educatic 2022” ENTS (School National of Social Work – Social Activities, support with organization and preparing scenario.