

# Gustavo Enrique Ramos Alcaraz

📍 Ensenada, B.C., MX

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in Gustavo Ramos

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## Education

**Ph.D. Centro de Investigación Científica y de Educación Superior de Ensenada**, Dept. of Electronics and Telecommunications, Division of Applied Physics.

Ensenada, B.C., México  
April 2020 - October 2024

- Ph.D. in Electronics and Telecommunications with a focus on Telecommunications.
- **Research:** Design of a star recognition algorithm in astronomical images. ([Thesis](#) [🔗](#))

**M.Sc. Centro de Investigación Científica y de Educación Superior de Ensenada**, Dept. of Electronics and Telecommunications, Division of Applied Physics.

Ensenada, B.C., México  
August 2017 - December 2019

- Master of Science in Electronics and Telecommunications with a focus on Telecommunications.
- GPA: 90.13/100.00
- **Courses:** Signals and Systems, Fundamentals of Wireless and Satellite Communications, Digital Communications, DSP (Digital Signal Processing), Stochastic Processes, Satellite Systems.
- **Research:** Development of a star recognition algorithm in astronomical images. ([Thesis](#) [🔗](#))

**B.Eng. Universidad de Colima**, Faculty of Mechanical and Electrical Engineering.

Coquimatlán, Colima, México  
September 2013 - August 2017

- Bachelor of Engineering in Communications and Electronics Engineering.
- Thesis and EGEL exam unanimously approved with distinction.
- **Courses:** Analog Electronics, Digital Electronics, Digital Systems, Programming Fundamentals, Control Systems, Networks and Telephony, Calculus.
- **Thesis:** Simulation and Analysis of Time and Frequency Synchronization Strategies for OFDM Systems. ([Thesis](#) [🔗](#))

## Work Experience

**Universidad Autónoma de Baja California, Faculty of Sciences**, Part-time Professor, Level C.

Ensenada, B.C., México  
July 2024 - now

- Course: Computer Organization and Architecture. Taught in the Computer Science program.

**Universidad de Ensenada, UNIENS**, Part-time Professor.

- Course: Information Technology. Taught in the International Business program. From September 2 to October 3, 2024.
- Course: Management of Electronic Media. Taught in the Educational Sciences program. From November 11 to December 12, 2024.

## Research Experience

**Centro de Investigación Científica y de Educación Superior de Ensenada**, PhD. Student.

Ensenada, Baja California  
April 2020 - August 2024  
4 years and 2 months

- Creation and design of algorithms for object identification in images, using Python and Matlab.
- Operation of optical systems such as telescopes, lenses, and CMOS and CCD cam-

eras.

- Data management and image cleaning.

**Instituto de Astronomía, UNAM**, Telescope Observer and Operator.

- Training in telescope operation and image acquisition techniques; participated in the observation campaign of asteroid 15094 Polymele.

Ensenada, B.C., México

August 2023 - February 2024

6 months

**Instituto Nacional de Astrofísica, Óptica y Electrónica, INAOE**, Research Summer Program.

- Project: "Signal Encoding Using Chaotic Oscillators Implemented on FPGA".

Tonantzintla, Puebla, México

July - September 2016  
2 months

**Faculty of Mechanical and Electrical Engineering, Universidad de Colima**, Institutional Social Service.

- Project: "Rehabilitation of Freescale Car Prototypes".

Coquimatlán, Colima, México

January - July 2016  
6 months

## Publications

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**Double light source Ronchi Tester for detection of ruling rotations.**

April 2024

Juan Manuel Nuñez-Alfonso, Javier Salinas-Luna, Yuliette Katinka Nuñez-Moreno, Joel Humberto Castro-Chacón, José Luis Monay-Arredondo, Benjamín Martínez-Chávez, **Gustavo E. Ramos-Alcaraz**, Iliana Marlen Meza-Sánchez [10.1088/1402-4896/ad368d](https://doi.org/10.1088/1402-4896/ad368d) [↗](#)

**Star-Identification System Based on Polygon Recognition.**

August 2023

**Gustavo E. Ramos-Alcaraz**, Miguel A. Alonso-Arévalo, Juan M. Nuñez-Alfonso [10.3390/aerospace10090748](https://doi.org/10.3390/aerospace10090748) [↗](#)

## Conferences, Congresses, and Workshops

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Workshop, NYRIA 2024, **Design of an algorithm for star recognition in astronomical images.**

San Diego, CA, USA  
October 20-25, 2024

NYRIA Workshop 2024, focused on the development of scientific instrumentation in astronomy for ground-based applications in infrared and visible wavelengths. Participation in the interdisciplinary **Hackathon** for the design of a 1-meter telescope with minimal CO<sub>2</sub> emissions and pollution. Held at the Department of Astrophysics and Astronomy, UC San Diego.

**Gustavo E. Ramos-Alcaraz** [NYRIA Workshop 2024](#) [↗](#)

Congress, SOMI XXXIII, **Experimental Verification of a Star Identification Algorithm Using Ground-Based Telescope Images.**

Torreón, Coahuila, México  
October 2018

**Gustavo E. Ramos-Alcaraz** [SOMI XXXIII Congress on Instrumentation](#) [↗](#)

Congress, SOMI XXXIII, **New Ronchi Tester That Eliminates the Grid Rotation Problem.**

Torreón, Coahuila, México  
October 2018

**Gustavo E. Ramos-Alcaraz**

[SOMI XXXIII Congress on Instrumentation](#) [↗](#)

## Scholarships and Awards

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**CONACyT Ph.D. Scholarship (2020-2024):** Doctoral scholarship awarded by the National Council of Science and Technology of Mexico, scholarship number 842163.

**CONACyT Master's Scholarship (2017-2019):** Master's scholarship awarded by the National Council of Science and Technology of Mexico, scholarship number 842163.

**Scholarship for Outstanding Students (2016-2017):** "Roberto Rocca Education Program" scholarship for undergraduate engineering studies.

## Technical Skills

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**Programming Languages:** Python, MATLAB, C, VHDL, and L<sup>A</sup>T<sub>E</sub>X.

**Software:** Visual Studio, Anaconda's Spyder, Microsoft Word and Excel, MATLAB, and Wolfram Mathematica.

**Operating Systems:** Microsoft Windows, GNU/Linux distributions such as Debian, Ubuntu, and Fedora, MacOS.

## Languages

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**Spanish:** Native proficiency

**English:** Intermediate level: ability to read and write technical documents, sufficient verbal communication.