Alberto Ruiz Biestro

BSc Engineering Physics

La Choza, Monterrey, N.L., México
(+52) 448 116 1610
A01707550@tec.mx
ModifiedBear@GitHub
Webpage

EDUCATION

2020 – 2024 B.S., Engineering Physics (*in progress*)   Academic Merit Scholarship recipient
Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), Monterrey NL, Mexico.

Current GPA: 3.86   (Percent Grade: 96.43)

<u>Relevant Courses</u>: Optics, Classical and Quantum Mechanics, Numerical physics, Statistical Mechanics, Electrodynamics.

2019 – 2020 CAMBRIDGE INTERNATIONAL AS & A levels
Physics (grade: A)   Mathematics (A)   Spanish (A)   English (b)   Biology (c)

EXPERIENCE

2021 – 2022 **Undergraduate Research Assistant**
Advisors: Azazel Monserrat Contreras, Dr. Omar Lozano-García.
Zambrano Hellion Hospital, ITESM, Mexico.
- Developed data-analysis tools for spectroscopy characterization and instrument readout.
- Experimental synthesis of PLGA-based nano-particles for drug delivery.
- Experience with laboratory equipment, NP-synthesis, and spectroscopy.

2022 **Undergraduate Project Experience**
Advisors: Blas M. Rodríguez Lara   *ITESM, Mexico.*
- Design and modeling of Silicon-On-Insulator (etched) grating coupler.
- Simulation of coupled waveguide geometry and light redirection onto trapped ion.

2021 – 2022 **Undergraduate Research Experience**
Advisors: Dr. Antonio Ortiz-Ambriz, Dr. Gerardo Fox, Dr. Servando López.   *ITESM, Mexico.*
- Numerical simulation of the *Nonlinear Schrodinger Equation*.
- Soliton propagation through pseudo-spectral method (split-step Fourier).
- Developed audio-identification algorithm in order to identify an audio recording from a microphone.
- Application of FFT and signal-processing methods.
- Numerical simulation of the travelling-salesman-problem through simulated annealing. Other work includes working with continuous-time Markov processes and the Lenz-Ising model.

2020 – 2021 **Science Team**
Eagle-X Robotics team.   *ITESM, Mexico.*
- Designed an IR-RAMAN spectrophotometer for in-situ analysis of biosignatures.
- Presented design in CONACES 2021 exposition, organized by the Mexican Space Agency.

AWARDS AND ASSOCIATIONS

- **SPIE** Student Chapter President
- Academic Merit Scholarship (ITESM)
- Undergraduate **Quantum Computing Club** co-founder and VP

SKILLS

- **Technical Skills**: basic C/C++, COMSOL (Wave Optics, Ray Optics), Git, Julia, LaTeX, Linux shell, Matlab, and Python.
- **Language Proficiency**: Spanish (Native), English (bilingual proficiency).
- **Soft Skills**: Creativity, leadership, fast-learner, teamwork, attention to detail.

ACTIVITIES AND INTERESTS

Social Services Teaching at low income communities in Mexico.

Sports Former state rugby player.

Enjoy hiking, biking, and the outdoors.

Other activities Undergraduate electromagnetism course tutor.