Luis Lauro Aizpuru-Vargas, M.Sc.

A01195658@tec.mx Luis Lauro Aizpuru-Vargas
https://luisaizpuru-vargas.github.io/

Employment History

2019 – 2020 **Research Assistant**
Jülich Supercomputing Centre (JSC)
Forschungszentrum Jülich
Jülich, Germany

2019 **Teaching Assistant**
Argelander-Institut für Astronomie (AIfA)
Universität Bonn
Bonn, Germany

Education

2024 – 2028 Ph.D. Computer Science (Medical Informatics Track)
Tecnológico de Monterrey
Monterrey, Mexico
Preliminary Thesis title: *"Personalized AI-Driven Decision Support for Sedation and Analgesia in the ICU in the Alison++ Project"*

2021 – 2023 M.Sc. Medical Physics
Pontificia Universidad Católica de Chile
Santiago, Chile
Thesis title: *"A study of the vascular effect of photodynamic therapy with oxygen variation on chorioallantoic membrane model"*

2017 – 2020 M.Sc. Astrophysics
Rheinische Friedrich-Wilhelms-Universität Bonn
Bonn, Germany
Thesis title: *"Investigation on gravitational star-disk encounters producing 'Oumuamua and Borisov-like Interstellar Objects"*.

2012 – 2017 B.Sc. Physics (Astrophysics Track)
University of Alberta
Edmonton, Canada

Research Publications

Journal Articles

1 **L. Aizpuru-Vargas**, R. Villalba-Pacheco, R. Álvarez-Vaccaro, J. T. Egaña, B. Sánchez-Nieto, I. Espinoza, and H. Harb Buzzá, "Photosynthetic microalgae-enhanced oxygenation amplifies vascular response to photodynamic therapy in a chorioallantoic membrane model," *Photochemical & Photobiological Sciences*, 2025 [In Revision].

2 S. Pfalzner, **L. Aizpuru-Vargas**, A. Bhandare, and D. Veras, "Significant interstellar object production by close stellar flybys," *Astronomy & Astrophysics*, vol. 651, 2021.

Skills

Languages	Spanish (Native Fluency) English (Very High Fluency) Portuguese (High Fluency) German (Moderate Fluency)
Coding	Python, R, SQL, LaTeX
Technical Skills	Advanced Mathematical Proficiency Scientific Modeling Data Analysis
Transferable Skills	Problem-Solving Research and Critical Thinking Attention to Detail Communication Multidisciplinary Interests

Miscellaneous Experience

Awards and Achievements

2024-2028 **PhD Stipend** SECIHTI (Secretariat of Science, Humanities, Technology and Innovation) Mexico

2021-2023 **Graduate Studies Academic Scholarship** Pontificia Universidad Católica de Chile

2019-2020 **Research Stipend** Forschungszentrum Jülich

2012-2015 **Undergraduate Studies Academic Scholarship** University of Alberta

Certifications

2023-2024 **Data Science Bootcamp** Awarded by Universidad del Valle de México.

Clincial SBRT and Radiosurgery Awarded by Elekta Foundation and RCC.

2023 **Advanced Radiotherapy and Protontherapy** Awarded by NHS England.

Certificate in Radiological Security Awarded by COFEPRIS.

2022 **Scientific Workshop on Emerging Techniques in Radiotherapy** Awarded by DKFZ.

2021 **Workshop on Computational Methods in Radiotherapy** Awarded by DKFZ.

References

Referee 1
Prof. Anna Karen Gárate-Escamilla
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Tecnológico de Monterrey
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Referee 2
Prof. Hilde Harb-Buzzá
Institute of Physics
PUC Chile
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Referee 3
Prof. Susanne Pfalzner
Jülich Supercomputing Centre
Forschungszentrum Jülich
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