Erick Donado

Barranquilla, Colombia • erickfabiandonado@gmail.com
erickdonado.com • linkedin.com/in/erickdonado • github.com/KanuSaru • ORCID 0009-0008-5752-3255

Education

Simón Bolívar University Barranquilla, Colombia
Systems Engineering 2023 - Present

- Cumulative GPA: **4.05 / 5.00**. Honor Roll, **Undergraduate Research Excellence Award** (Elite category), 2025-2 and 2026-1.
- 2nd place, Integrative Projects Fair (2023).
- International COIL project with the University of Cádiz (Spain) on data engineering for the SDGs (2025).

Research Experience

Data Sciences Research Seedbed, Simón Bolívar University Barranquilla, Colombia
Undergraduate Researcher (Advisor: Dr. Juan Carlos Calabria Sarmiento) 2023 - Present

- Developed deep learning models (U-Net) for automated breast cancer segmentation in ultrasound images; work published as a book chapter and a journal article and presented at 5 national and international events.
- Implemented a machine learning framework from scratch in C to study model training at a low level.
- Evaluating intersectional racial and gender bias in large language models, focused on the representation of the Afro-Colombian community.

Publications

- Donado-Fonseca, E. F. (2026). *Segmentación automatizada de cáncer de mama en imágenes de ultrasonidos mediante redes neuronales convolucionales* [Automated breast cancer segmentation in ultrasound images using convolutional neural networks]. *Publicaciones e Investigación*, UNAD (ISSN 1900-6608).
- Donado-Fonseca, E. F., González-Vásquez, M. A., Iglesias-Durán, Á. F., García-Londoño, A., & Calabria-Sarmiento, J. C. (2024). *Segmentación automatizada del cáncer de mama en imágenes de ultrasonido usando modelos de aprendizaje profundo autoaprendientes* [Automated breast cancer segmentation in ultrasound images using self-learning deep learning models]. In *Conectando puntos: inteligencia artificial, datos y su impacto en la sostenibilidad* (pp. 75-84). Ediciones Universidad Simón Bolívar. ISBN 978-628-7533-84-4.

Conference Presentations

- *Evaluation of Racial and Gender Bias in Large Language Models: Representation of the Afro-Colombian Community*. XI International Seminar on Engineering and Design, Simón Bolívar University (Oct 2026).
- *Rethinking Machine Learning from the Low Level: Implementing a Framework in C*. ACOFI 1st Regional Meeting on Research and Innovation in Engineering, Barranquilla (May 2026).
- *Automated Breast Cancer Segmentation in Ultrasound Images Using Deep Learning*: EIEI ACOFI / 5th Latin American Engineering Congress (CLADI), Cartagena (Sep 2025) • EXPOTECH UNAD International Congress, Bogotá (May 2025) • XXII RedCOLSI Atlántico Departmental Meeting (May 2025) • IX International Meeting on Artificial Intelligence, Simón Bolívar University (Sep 2024) • XVI RedCOLSI Regional Meeting (May 2024).

Leadership, Teaching & Activities

IEEE Computational Intelligence Society Barranquilla, Colombia
Student Branch Chapter President September 2024 - 2026

- Led and coordinated a team of 5+ members to organize events, workshops, and seminars on AI and computational intelligence.
- Increased chapter membership by 30% through outreach initiatives, and organized a workshop on AI-driven models with over 50 participants.
- Fostered collaboration between universities and industry, and secured sponsorship to fund technical resources and guest speakers.

IEEE Computer Society, Simón Bolívar University Chapter Barranquilla, Colombia
Competitive Programming Instructor & Workshop Speaker April - October 2024

- Taught 27 weekly 4-hour sessions (108 hours) on competitive programming, data structures, and algorithms to prepare the Byte2Solution programming team for IEEEXtreme 18.0.
- Led the hands-on workshop *Data Analysis and Visualization with Python* (May 2024).
- Invited speaker at the launch of the IEEE Computer Society and RAS chapters at UNITECNAR, Cartagena (Oct 2024), on the evolution of AI and its impact on competitive programming.

Community Volunteering Barranquilla, Colombia
Volunteer & Event Staff 2024

- Volunteer, Hacktoberfest Barranquilla 2024 (Caribe Dev, IEEE Student Branch Universidad del Norte).
- Logistics team, IX International Meeting on Artificial Intelligence, Simón Bolívar University.

Teaching Experience

Chico Vence Academy Barranquilla, Colombia
STEM & Language Instructor 2024 – September 2026

- Taught Mathematics, Geometry, Statistics, Physics, English, and Programming from 4th grade to master's level, with tailored strategies for students with special learning needs (ADHD, ASD).
- Mentored and tutored over 1,000 students, achieving a near 100% course pass rate; developed custom materials on logical reasoning, quantitative analysis, and programming.

CAMFI, PIM-D Barranquilla, Colombia
Academic Tutor (Monitor) August 2023 – June 2025

- Supported professors with course materials, programming assignments, and tutoring in algorithms and programming.
- **Learn ML** (2026): free, bilingual (English/Spanish) self-study route into machine learning published on my website, adapted from an open course: 5 phases and 73 curated resources in three priority levels, with self-checks and progress tracking.

Certifications & Competitions

- **Fundamentals of Generative AI** (75 hours, 3 ECTS), Universidad Internacional de La Rioja (UNIR), Spain, 2026; grade 9.9/10 (Outstanding). Prompt engineering, AI limitations, and ethics (bias, privacy, legal risks).
- **Certificate in Teaching Fundamentals** (120 hours), Department of Pedagogy, Simón Bolívar University, 2024.
- **IEEE Certification in Web Design and Development** (HTML, CSS, JavaScript, responsive design, UX), 2025. IEEE Student Member.
- **NASA International Space Apps Challenge**, participant, 2025.
- **Google Developer Groups "Build with AI" Hackathon** (48 hours), Barranquilla, 2025.
- **IEEEXtreme 18.0** global programming competition (19,000+ participants), 2024.
- **Winner**, SolidWorks course competition, IEEE Student Branch, Universidad Autónoma del Caribe, May 2024.
- **University Leadership School** (4th edition), for leaders of student groups, Simón Bolívar University, Aug 2024.

Skills

- **Programming:** Python, C, C++, SQL, JavaScript/TypeScript. **ML & Backend:** TensorFlow, PyTorch, OpenCV, Scikit-learn, FastAPI, Flask.
- **AI & Data:** Medical imaging, LLM bias evaluation, data analysis and visualization (Pandas, Matplotlib, Seaborn).
- **Tools:** Git/GitHub, Jira, Postman, Excel, XML/JSON. **Languages:** Spanish (Native), English (C1).
- **Leadership & Teaching:** Team coordination, mentoring, public speaking, event planning, inclusive pedagogy.
- **Open source:** three JavaScript libraries on npm: dither-model (software 3D renderer for STL files, with mesh simplification), dither-moon (the Moon's real phase from NASA maps) and dither-player.