

# Curriculum Vitae, José Exequiel Fuentes Gil, M.Sc.

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## Employment History

- Jan 2022– Present      **Research Assistant** Florida International University, Knight Foundation School of Computing and Information Sciences, Miami FL. Ph.D. student, member and research assistant of the research group Motion Robotics and Automation Lab (MORA) developing applications and algorithms for automated vehicles inspired by machine learning techniques and cryptography computation.
- Dec 2020 – Feb 2021      **Research Assistant** National University of Colombia, Sciences Faculty, Mathematics department, Bogotá D.C. Research project: formulate and implement a model for the construction of dynamic surveillance quadrants that adapt to changes in the dynamics of occurrence of police reasons and that optimize response times to these events.
- Jan 2020 – Aug 2021      **Research Assistant** National University of Colombia, Medicine Faculty, Cim@lab research investigation group, Bogotá D.C. Participation in several research processes extracting meaningful characteristics from different medical image types such as Magnetic Resonance Images and videos from medical procedures to develop automatized techniques of machine learning to facilitate super-resolution techniques and photo-documentation of gastrointestinal procedures.
- Jun 2018 – Dec 2021      **Teacher Assistant** National University of Colombia, Sciences Faculty, Mathematics department, Bogotá D.C. In charge of designing, teaching, and evaluating mathematical courses, especially calculus courses and linear algebra courses at the university level for students of the university.
- Jan 2018 – Jul 2018      **Educational Assistant** Kumon Colombia, Bogotá D.C.. In charge of supervising and evaluating the students who have taken the education program of Kumon.
- Aug 2017 – Dec 2017      **Auxiliary student** National University of Colombia, Bogotá D.C. Integrant of the GEA (Grupos de Estudio Autónomo from the National University of Colombia) group. Some assigned tasks were:
- To promote autonomy in the learning of the students of the program "ser pilo paga".
  - To make academic support to students in mathematical areas such as calculus and linear algebra.
  - To design challenging situations or problems that promote reflection and argumentation in students.
- Jun 2016 – Jul 2016      **Student Assistant** National University of Colombia, Sciences Faculty, Mathematics department, Bogotá D.C. Assisting as a student assistant to develop the inter-monthly basic math courses, making tutorships, helping test design and applying the subjects exams.

## Employment History (continued)

Jun 2017 – Jul 2017

📖 **Student Assistant** National University of Colombia, Sciences Faculty, Mathematics department, Bogotá D.C. Assisting as a student assistant to develop the inter-monthly basic math courses, making tutorships, helping test design and applying the subjects exams.

## Education

2022 – Present

📖 **PhD., Computer Sciences, Knight Foundation School of Computing and Information Sciences, Florida International University.**

2018 – 2021

📖 **M.Sc., Applied mathematics, National University of Colombia.**  
Thesis title: *Restauración de imágenes usando programación lineal.*

2013 – 2017

📖 **BS., Mathematics, National University of Colombia.**

## Research Publications

### Journal Articles

- 1 Padrao, P., Fuentes, J., Bobadilla, L., & Smith, R. N. (2022). Estimating spatio-temporal fields through reinforcement learning. *Frontiers in Robotics and AI*, 9.
- 2 Vera, J. M. R., & Fuentes, J. (2021). Restauración de imágenes borrosas usando un modelo regularizado de programación lineal. *Ingeniería*, 26(2).



### Conferences and Conference Proceedings

- 1 Fuentes, J., Bobadilla, L., & Smith, R. N. (2022). Localization in seemingly sensory-denied environments through spatio-temporal varying fields. IEEE, Presented as IEEE International Conference on Robotic Computing (IRC).
- 2 Rojas, C. A., Padrao, P. V., Fuentes, J. E., Albayrak, A. R., Osmanoglu, B., & Bobadilla, L. (2022). Combining remote and in-situ sensing for autonomous underwater vehicle localization and navigation. In *Oceans 2022, hampton roads* (pp. 1–7). [doi:10.1109/OCEANS47191.2022.9977208](https://doi.org/10.1109/OCEANS47191.2022.9977208)
- 3 Emura, F., Bravo, D., Ruano, J., Fuentes, J., Torres-Rincon, R., Malaver, O., & Romero, E. (2021). A novel deep learning model to facilitate complete systematic photodocumentation during upper gi endoscopy. (Vol. 93, AB187). Elsevier.
- 4 Fuentes, J. (2021). L1 regularization method for image deblurring, Presented as X International Congress of Applied and Computational Mathematics, Tingo María, Perú.
- 5 Fuentes, J., & Vera, J. M. R. (2020). A deblurring model for super-resolution mri interpolated images. In *15th international symposium on medical information processing and analysis* (Vol. 11330, 113300Q). International Society for Optics and Photonics.
- 6 Fuentes, J. (2019). Restauración de imágenes borrosas usando programación lineal, Presented as XXII Colombian Congress of Mathematics, Popayán, Colombia.

### Books and Chapters




- 1 Fuentes Gil, J. E. (2021). *Restauración de imágenes borrosas usando programación lineal*. Bogotá-Ciencias-Maestría en Ciencias-Matemática Aplicada.

## Skills




- Languages     Strong reading, writing and speaking competencies for Spanish, English.  
Intermediate reading, writing and speaking competencies for German.  
Basic reading, writing and speaking competencies for Portuguese.
- Coding     MatLab, Python,  $\text{\LaTeX}$ .

## Miscellaneous Experience


### Awards and Achievements

- Nov 2017     **Winner of Efi-ciencias exam (Mathematics area)**, National University of Colombia. Exam developed by the Sciences Faculty of the National University of Colombia to evaluate last semester's students.
- Aug 2018 – Dec 2021     **Teaching assistant scholarship**, National University of Colombia. Scholarship for studying a postgraduate program in the sciences faculty provided for winners of Efi-ciencias test.
- Sep 2020     **Meritory distinction**, National University of Colombia. Meritor distinction in the master thesis titled: "Restoration of blurred images using linear programming".

### Certifications

- 2020     **Specialized program - Academic English**. Coursera.  
 **Specialized program - Python for Everybody**. Coursera.
- 2021     **Specialized program - Applied Data Science with Python**. Coursera.

## Founding projects

- 2022 – Present     Since I am a Research Assistant at Florida International University I am currently enrolled in the project AWD000000011585 ID 80001317 (FIU identifiers). Also, I have participated s Research Assistant founded by the National Science Foundation 2034123 and 2024733 awarded with US \$605,569 and US \$97,494 respectively.