Edgar Herrera Delgado

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EDUCATION

PHD, APPLIED MATHEMATICS
King's College London
March 2020 | London, UK

BSC, GENOMIC SCIENCES
UNAM
July 2015 | Cuernavaca, Mexico
Graduated with Honours
GPA: 9.7/10 Top 3 GPA in the cohort

SKILLS

PROGRAMMING
Python: pandas, sklearn, tensorflow, scipy, seaborn • Unix shell • SQL • Mathematica • Matlab • R • LaTeX • Cloud computing (*eg* Azure)

QUANTITATIVE
Statistics • Mathematical modelling • Machine Learning • Experimental design (A/B like)

INTERPERSONAL
Public speaking • Leadership • Technical communication • Writing

LANGUAGES
English: Native • Spanish: Native
French: B1 • Japanese: B1

KEY COURSES

Deep Learning by DeepLearning.AI on Coursera (URL)

Natural Language Processing by DeepLearning.AI on Coursera (URL)

Statistical Physics • Mathematical modelling • Stochastic Processes • Complex Systems

Taught: Linear Algebra

AWARDS & FUNDING

2022 EMBO Postdoctoral Fellowship (9% success rate)
2020 FRM Postdoctoral Fellowship
2015 Crick-KCL PhD Scholarship
2015 CONACYT/CONCYTEP PhD Scholarship
2014 International Scholarship of Academic Excellence, UNAM
2014 Stipend from ZAV (Zentrale Auslands Fachvermittlung)
2010 2nd place, 24th Mexican Mathematics Olympiad
2009 3rd place, 23rd Mexican Mathematics Olympiad

EXPERTISE & INTERESTS

I have 7 years of experience solving data science problems in an academic context. I would like to undertake a data scientist role as I greatly enjoy problem solving and look forward to a fast paced and result focused rhythm which suits my interests. I am aiming for a role where I am required to constantly learn new skills and problem solving paradigms in order to provide suitable solutions. I would like a role where I can work with people with different skills and get involved with the bigger picture and direction of the company.
I specialise in quantitative analysis of big data using a combination of mathematical modelling, statistics and machine learning. I am proficient using Python and its packages, but consider my greatest strength my ability to rapidly pick up new knowledge due to my solid mathematical foundations. I have solid writing and presentation skills from experience publishing and presenting internationally. I am used to taking leadership and planning roles as I have done so to complete academic projects.

EXPERIENCE

POSTDOCTORAL RESEARCH FELLOW | Institut Curie
October 2020 - Present | Paris, France

- Using big data analysis, elucidated the timing of early embryo specification, finding for the first time when an embryo decides where to implant.
- Published in depth discussion of all mathematical advances in the understanding of early embryogenesis, as a resource for the community [1].

PHD RESEARCHER | The Francis Crick Institute
September 2015 – August 2020 | London, UK

- Discovered how living organisms form precise boundaries between distinct tissues. This was performed through combining experimental big data with stochastic modelling, machine learning and mathematical systems theory [2].
- Created mathematical framework to model signal propagation in biological networks, describing for the first time how such networks store memory [5].
- Developed mathematical method that reduces dimensionality of dynamical systems and revealed key components of established biological networks [4].

WORKSHOP ORGANISER | Quantitative Living Systems
November 2017, November 2018 | London, UK

- Co-founded a successful interdisciplinary workshop, deciding schedule, speakers and event management.
- Secured public (EPSRC) and private funding for three consecutive workshops, which helped foster the local quantitative community.

UNDERGRADUATE RESEARCHER | Max Planck Institute
August 2014 – July 2015 | Tübingen, Germany

- Established 3D microscopy reconstruction pipeline in collaboration with experimentalists. This pipeline remains in use at the research group.

PUBLICATIONS

[1] Herrera-Delgado E, Maître JL†. (2021). *Cells Dev.* 203752. (URL).
[2] Exelby K*, Herrera-Delgado E*†, *et al.* (2021). *Development.* 148(4):dev197566. (URL).
[3] Herrera-Delgado E† and Sollich P†. (2020). *Europhys. News.* 10.1051/epn/2020506. (URL)
[4] Herrera-Delgado E, *et al.* (2020). *Phys. Rev. Research.* 10.1103/PhysRevResearch.2.043069. (URL).
[5] Herrera-Delgado E, *et al.* (2018). *PLOS Comput Biol.* 14(2):e1006003. (URL).

*Equal contribution, †Correspondence