Julio Cesar Enciso-Alva

Applied Mathematician & Data Scientist

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GENERAL SKILLS

- Data analytics, math/statistical modeling, machine learning.
- Object oriented programming, data management.
- Interdisciplinary research, report generation, problem solving.
- People management, project development and deployment.
- Teaching and mentoring, diversity in higher education.
- Graphic design, publication-quality and educational purposes.

TECHNICAL SKILLS

Programming	Matlab, R, Python, C++, MySQL
Software	GNU Linux, MS Office, Git, Jupyter, LaTeX, ggplot
Libraries	Sci-kit, PyTorch, Tensorflow, CUDA, shiny [R]
Languages	English, Spanish, German
Miscellanea	Graphic Design, Latin-American Studies

ACADEMIC APOINTMENTS

2019 – 2024 **Graduate Teaching Assistant** UT Arlington
- Instructor of Record for 8 college-level class, avg. enrollment was 50 students per section.
- College Algebra and Calculus 1, for Economics.

2023-2024 **REU Mentor** UTA-USDA
- Supervised a group of undergraduates performing research.
- Trained mentees in Matlab programming and algorithms.

2021 – 2024 **Graduate Peer Mentor** UT Arlington
- Coached numerous (5+) first-year grad students.
- Supervised integration of mentees as Lab Instructors.
- Trained mentees for Preliminary Exams in Analysis.

2020 – 2023 **Officer** SIAM Graduate Chapter
- Vice-president (2020 – 2021), President (2020 – 2023).
- Managed established events: bi-weekly seminar with avg. attendance of 12 graduate students.
- Initiated department-wide research symposium for graduate.

Aug 2023 **Consultant** UT Arlington
- Rater in the assessment of Core Curriculum Objectives.
- Assignments were graded to investigate consistency.

RESEARCH PROJECTS

Electrical Source Imaging (ESI) is used to locate neural sources of electrical activity. Applications include non-invasive neuropsychology and monitoring of epileptogenic areas, among others.

- Non-invasive monitoring of ictal activity in infants.
- Evaluation of multi-modal ESI methods from EEG.
- Validation of ESI methods from ECoG in animal models.
- Retrospective monitoring of stroke in animal models.
- Evaluation of Virtual Deep Electrodes from ESI data.
- Novel ESI methods from Dura Imaging and Neural Networks.

Skills involved:

- Numerical Linear Algebra
- Partial Differential Equations
- Finite Element Methods
- Object-Oriented Programming
- Constrained Optimization
- Uncertainty Quantification
- Bayesian Models
- Unsupervised Learning

EDUCATION

2019 – 2024	**PhD, General Math**	UTA, TX, USA
2023	**MSC, General Math**	UTA, TX, USA
2012 – 2018	**BS, Applied Math + Biology**	UAEH, Mexico

ACCOLADES

Apr 2023	Outstanding Graduate Student Researcher
Apr 2024	Graduate School 2024 Dissertation Fellowship

PUBLICATIONS

- Enciso-Alva JC, Dobariya A, Johnson TE, Mickey B, Pascual JM, Su J. **(in review). A Robust ECoG Source Localization Method Using Brain Data Analytics Validated by Pig Intracerebral Recordings.** *NeuroImage*.
- Rajasekaran K, Ma Q, Good LB, Kathote G, Jakkamsetti V, Liu P, Avila A, Enciso-Alva JC, Markussen KH, Marin-Valencia I, Sirsi D, Hacker PMS, Gentry MS, Su J, Lu H, Pascual, JM. **(2022). Metabolic modulation of synaptic failure and thalamocortical hypersynchronization with preserved consciousness in Glut1 deficiency.** *Science Translational Medicine*, 14(665), eabn2956. DOI: 10.1126/scitranslmed.abn295
- Rosales-Lagarde A, Rodriguez-Torres EE, Itzá-Ortiz BA, Miramontes P, Vázquez-Tagle G, Enciso-Alva JC, García-Muñoz V, Cubero-Rego L, Pineda-Sánchez JE, Martínez-Alcalá CI, Lopez-Noguerola JS. **(2018). The Color of Noise and Weak Stationarity at the NREM to REM Sleep Transition in Mild Cognitive Impaired Subjects.** *Frontiers in Psychology*, 9, 1205. DOI: 10.3389/fpsyg.2018.01205