



Javier Alejandro De Loera Chávez

● WORK EXPERIENCE

UNIVERSIDAD AUTÓNOMA NACIONAL DE MÉXICO – MEXICO CITY, MEXICO

TA – 01/08/2019 – 05/12/2019

Teaching assistant for Analytic Geometry at Faculty of Science, UNAM.

UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO – MEXICO CITY, MEXICO

TA – 01/08/2020 – 05/12/2020

Teaching assistant for Linear Algebra at Faculty of Science, UNAM.

UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO – MEXICO CITY, MEXICO

TA – 01/06/2020 – 31/07/2020

Teaching assistant for summer course on Linear Algebra at Faculty of Science, UNAM.

UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO – MEXICO CITY, MEXICO

RESEARCH ASSISTANT IN UNIVERSITY – 01/09/2020 – 01/10/2022

Software programming. Collaboration in the development of teaching and research software tools regarding hyperbolic geometry.

UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO – MEXICO CITY, MEXICO

TA – 01/02/2023 – 01/06/2023

Teaching assistant for Analytic Geometry at Faculty of Science, UNAM.

OUTLIER.AI – MEXICO CITY, MEXICO

AI REVIEWER – 10/10/2023 – 15/12/2024

Reviewer of artificial intelligence training tasks. I supervised and gave feedback on the work of people engaged in the completion of tasks to train large language models.

● EDUCATION AND TRAINING

20/01/2023 Mexico City, Mexico

BACHELOR OF MATHEMATICS Universidad Nacional Autónoma de México

Website <https://www.fcencias.unam.mx/> | Field of study Mathematics

08/08/2022 – 01/08/2024 Mexico City, Mexico

MASTER OF SCIENCE IN MATHEMATICS Universidad Nacional Autónoma de México

Website <https://matematicas.posgrado.unam.mx/> | Field of study Mathematics

01/11/2024 – CURRENT Rome, Italy

PHD IN MATHEMATICAL MODELS FOR ENGINEERING Sapienza Università di Roma

Website https://phd.uniroma1.it/web/MODELLI-MATEMATICI-PER-LINGEGNERIA-ELETTROMAGNETISMO-E-NANOSCIENZE_nD3523.aspx

Field of study Mathematics | Level in EQF EQF level 8

● LANGUAGE SKILLS

Mother tongue(s): **SPANISH**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C2	C1	C2
ITALIAN	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

●
 SKILLS

Programming languages (Python, R programm, C, Matlab) | SageMath (Good)

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 PUBLICATIONS

2024
 [A determinantal formula for cluster algebras from surfaces](#)

For cluster algebras of surface type, Musiker, Schiffler and Williams gave a formula for cluster variables in terms of perfect matchings of snake graphs. Building on this, we provide a simple determinantal formula for cluster variables via the weighted biadjacency matrix of the associated snake graphs, thus circumventing the enumeration of their perfect matchings.

Authors: Javier Alejandro De Loera Chávez | **Journal Name:** preprint

2025
 [Quivers with polynomial identities](#)

We provide a topological characterization of quivers whose path algebra satisfies a polynomial identity. This class includes the oriented cycle and acyclic quivers and, in the latter case, we describe the associated T-ideal. We introduce a generalization of Arnold's A-graded algebras, which we call locally A-graded algebras, and prove that they are also PI. We give an example of a quiver algebra satisfying a polynomial identity, even if the path algebra of the quiver does not.

Authors: Giovanni Cerulli Irelli, Javier De Loera Chávez, Elena Pascucci | **Journal Name:** preprint | **Publisher:** arxiv