Nicolás Martínez Heredia

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Summary

I am a scholar in Cartography with an interdisciplinary background in geospatial technologies, data visualization, and the humanities. I specialize in both theoretical and experimental Cartography, exploring and expanding the capabilities of map applications. My research focuses on developing new map capabilities by exploring innovative ways to visualize spatial semantics.

Education

PhD **TU Wien**, Doctoral program in Engineering Sciences, Cartography — Mar. 2025 to present

- **Research:** My doctoral project, *Perspectivist Cartography*, presents a new type of map that visualizes different perspectives of the same space.

MSc **TU München, TU Wien, TU Dresden, U. of Twente**, Cartography — 2022 to 2024

- **Coursework:** Geo-information, Geo-visualization and Geo-statistics, Applied cartographic research and development, GIS programming tasks

MA **University of the Andes**, Geography — 2019 to 2021

- **Coursework:** Maps and analysis with GIS, Cartography workshop, Physical geography, Cartography and culture, Geographic thought

BA **University of the Andes**, History — 2014 to 2019

- **Coursework:** Methods of historical research, History and philosophy of science, Geographic methods of field research

Professional Experience

TU Wien, Research Unit Cartography, University Assistant — Vienna, Austria, Nov. 2024 to Present

I am actively engaged in research, teach courses on Web Mapping, Multimedia Cartography, and Theoretical Cartography, and supervise students' learning. I have also served as a visiting lecturer at both TU Munich and TU Dresden. I also have experience with administrative tasks, including filing research proposals, planning meetings, and scheduling events.

Freelance, Cartographer — Bogotá, Colombia, Jan. 2021 to Oct. 2022

I elaborated maps for academic research projects. I contacted researchers, identified their needs, gathered data, and visualized it accordingly.

University of the Andes, Graduate Teaching Assistant — Bogotá, Colombia, Aug. 2019 to Dec. 2019

I was a teaching assistant for the class Colombia: Space, Time, Difference [Colombia: Espacio, Tiempo, Diferencia]. I worked supporting students and their learning process.

Academic Activities

International Cartographic Association (ICA), Editor of ICA News — Vienna, Austria
Apr. 2026 to present

I am the editor of the bi-yearly news report of the activities of the ICA. I communicate with the association's committees, commissions, and working groups to collect and disseminate information on activities carried out throughout the ICA.

Lectures for Future (L4F), Lecturer — Vienna, Austria
Apr. 2026 to present

I participate in the Austrian L4F program, collaborating with the Vienna University of Economics and the Vienna Academy of Fine Arts, by teaching a lecture on the history of map use in environmentalist movements.

Next Generation Cartographers (Working group of the International Cartographic Association), Member — Vienna, Austria
Jan. 2025 to present

I actively participate in meetings and regularly contribute to activities by sharing my research and knowledge of upcoming events and positions in the field of Cartography.

Eurocarto, Volunteer — Vienna, Austria
Sept. 2024

I participated in a team of volunteers who handled logistical tasks for the conference's organizing committee.

Geographies of Power [Geografías del poder], Member — Bogotá, Colombia
Aug. 2018 to Jun. 2019

I was part of a research team (from the University of the Andes) that designed and implemented a census in a rural area on the outskirts of Bogotá, Colombia. I conducted fieldwork, including interviews, and managed spatial information.

YouthMappers, Member — Bogotá, Colombia
Aug. 2017 to Apr. 2019

I was a founding member of the University of the Andes Youthmappers chapter [Cartógrafos Uniandes]. We collaborated on community projects and the OpenStreetMap platform.

Skills

Languages: Spanish (native), English (C2), German (A2), French (A2)

Technologies: ArcGIS Suite, QGIS, Adobe Suite, Blender, Geoserver, Office 365, Kobo Toolbox, LimeSurvey

Programming languages: Python, R, HTML + CSS, Javascript, Java, SQL

Publications & Theses

Martínez Heredia, N, & Kang, Y. *GeoAI: the Cartographer in the mirror* in *AI in Cartography: A New Era of Making and Using Maps* edited by Samantha Arundel and Raimund Schnürer. Elsevier. — Expected early 2027
In drafting

Martínez Heredia, N. Perceptual Distortions in Map Reading. *Revista Cartográfica*, 112, 169-192. — 2026
https://doi.org/10.35424/rcarto.i112.6059

Martínez Heredia, N, & Ledermann, F. Beyond naturalism: the cartographic ontology visualizer. *Abstracts of the International Cartographic Association*, 10, 190. — 2025
https://doi.org/10.5194/ica-abs-10-190-2025

Martínez Heredia, N. *Perceptual Distortions in Cartography: Maps for Trickery* (Master's thesis). Technische Universität Wien. 2024
https://cartographymaster.eu/wp-content/theses/2024_Martinez_Thesis.pdf

Martínez Heredia, N, & Ledermann, F. Perceptual distortions in cartography: Maps for trickery. *Abstracts of the International Cartographic Association*, 7, 101. 2024
https://doi.org/10.5194/ica-abs-7-101-2024

Martínez Heredia, N. *Spatiality of gendered violence against women in urban environments: a first approach in Bogotá, Colombia [La espacialidad de la violencia contra las mujeres en entornos urbanos: una vista preliminar desde Bogotá]* (Graduate research paper). Universidad de los Andes. 2022
http://hdl.handle.net/1992/51724

Martínez Heredia, N. The XIX century was the time of the hunter [El siglo XIX fue una época de cazadores]. *Remanente*, 4, 14-22. 2019
https://graficasmolinari.com/remanente-4

Awards

PAIGH Prize for Outstanding Thesis in Cartography, Geodesy and/or Geographic Information (2025): I was awarded the prize for the outstanding thesis by the Panamerican Institute of Geography and History (PAIGH).

ICA Scholarship (2025): I was awarded a scholarship to participate in the International Cartographic Conference in Vancouver, Canada, by the International Cartographic Association (ICA).

Erasmus Mundus Scholarship (2022): I was awarded this scholarship to pursue the European Master's in Cartography.

Master in Geography Cum Laude (2021): I graduated with honors by achieving a grade point average in the top 3 percent of the faculty of Social Sciences in the last five years.

Historian Cum Laude (2019): I graduated with honors by achieving a grade point average in the top 3 percent of the faculty of Social Sciences in the last five years.

Projects

Organisms Democracy in Berlin 2025

A map prototype I developed to illustrate interspecies relationships in a community garden project.

GeoBooks 2024

I was part of a team that developed an Android application that lets users find public-domain books via an interactive map interface.

CrowdedSpace 2023

I was part of a team that developed an interactive 3D visualization that displays all human-made objects in Earth's orbit.