

Margarita Geleta

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PARTICULARS

EDUCATION

2022-present University of California, Berkeley

Ph.D. in Computer Science

Major in Artificial Intelligence; Minors in Human-Computer Interaction & Business Administration

· **Courses (letter graded):** *Machine Learning, Deep Neural Networks, Computer Vision, Security in Computer Systems, Natural Language Processing, User Interface Design and Development, Immersive Computing and Virtual Reality; (pass/no pass): Theoretical Statistics; (audited): Introduction to Computer Vision and Computational Photography, General Genetics; (seminars): Research to Startup Seminar.*

· **Haas School of Business Courses (letter graded):** *Leading High Impact Teams; Lean Transfer (Lean Startup); Negotiations and Conflict Resolution.*

2021-2022 University of California, Irvine (UCI)

Ph.D. in Computer Science (transferred)

· **Courses (letter graded):** *Artificial Intelligence, Scientific Computing, Machine Learning, Probabilistic Learning, Fundamentals of the Design and Analysis of Algorithms, Computational Methods in Genomics, Neural Networks & Deep Learning, Brain-Inspired Learning; (seminars): Seminars in Computer Science Research.*

2017-2021 Universitat Politècnica de Catalunya (UPC)

Bachelor of Data Science and Engineering

· Active member in the *Barcelona School of Informatics* (FIB) governance.

· **Courses (letter graded):** *Data Analysis, Machine Learning, Mathematical Optimization, Deep Learning, Parallelism and Discrete Systems, Database Systems, Information Visualization, Information Retrieval and Analysis, Algorithmics, Statistics.*

RESEARCH INTERESTS

My research focus is advancing investigative genetic genealogy. In an academic setting, I am interested in the application of AI/ML techniques for enhanced kinship prediction and genotype simulation conditioned on pedigrees. In industry-focused R&D projects, I enjoy working on applied computer vision (CV) and extended reality (XR) applications.

EXPERIENCE

RESEARCH EXPERIENCE

2022-present NI Lab (UC Berkeley, co-advised by Stanford University)

Aug. 2022 -
present

Graduate Student Researcher (Berkeley, CA)

· Published and showcased research at the *Conference on Neural Information Processing Systems (NeurIPS)* 2023 [Pub5], *Deep Learning Barcelona Symposium (DLBCN)* 2023, *American Society of Human Genetics (ASHG)* meetup 2022 [Abs3].

2021-2022 Engaging Technology and Application Design Lab (UC Irvine)

Oct. 2021 - Aug. 2022	<i>Graduate Student Researcher & Teaching Assistant (Irvine, CA)</i> <ul style="list-style-type: none"> · Maintainer of the NSF-funded <i>Maestro</i> project [Pub4], providing a service for cybersecurity educational purposes in the domain of adversarial attacks and defenses. · Teaching Assistant in CS 175 (Project in AI): 147 undergraduate students.
2021 Jun. 2021 - Sept. 2021	Bustamante Lab (Stanford University) <i>Full-time Research Assistant (Remote)</i> <ul style="list-style-type: none"> · Published and showcased research at [TBA journal] [Pub8], and the <i>American Society of Human Genetics (ASHG)</i> meetup 2021 [Abs2].
Feb. 2021 - Jun. 2021	<i>Part-time Research Intern (Remote)</i> <ul style="list-style-type: none"> · Conducted my Bachelor Thesis “<i>Unsupervised Learning with Applications in Genomics</i>” [Ths1].
2020-2021 Sept. 2020 - Mar. 2021	Image Processing Group (GPI) <i>Independent Researcher (Barcelona, Spain)</i> <ul style="list-style-type: none"> · Published and showcased research at the <i>Women in Computer Vision</i> workshops (in conjunction with the <i>Conference on Computer Vision and Pattern, CVPR-WiCV</i>) 2021 [Abs1] and 2022 [Abs5], and the <i>International Conference on Acoustics, Speech, & Signal Processing (ICASSP)</i> 2022 [Pub2].

PROFESSIONAL EXPERIENCE

2024 May 2024 - Aug. 2024	Dolby Laboratories, Inc. <i>Sound Tech R&D PhD Intern @ Advanced Technology Group (San Francisco, CA)</i> <ul style="list-style-type: none"> · Quantified the benefits of spatial audio object interaction techniques in XR applications.
2024 Jan 2024 - present	Alumni Ventures (AV) <i>Ventures Scout (San Francisco, CA)</i> <ul style="list-style-type: none"> · The AV Venture Scout program is an extensive network of independent angels, entrepreneurs, and connectors. Venture Scouts share attractive investment opportunities with AV.
2024 May 2024 - June 2024	Aurelius Systems, Inc. <i>Co-founder (San Francisco, CA)</i> <ul style="list-style-type: none"> · Directed-energy edge-deployed systems for counter-drone defense backed by Founders, Inc.
2022-2023 May 2023 - Aug. 2023	Amazon.com <i>Applied Scientist II (L5 Intern) @ Home Innovation Team (Seattle, WA)</i> <ul style="list-style-type: none"> · Worked with large-scale Generative Models (GANs, diffusion models), GAN inversion techniques and image-to-image translation.
Jun. 2022 - Aug. 2022	<i>Applied Scientist II (L5 Intern) @ Home Innovation Team (Seattle, WA)</i> <ul style="list-style-type: none"> · Worked with large-scale Generative Models (GANs), GAN inversion techniques [Pub7] and deep harmonization.
2021 Jun. 2021 - Jul. 2021	UPC School of Professional & Executive Development (UPC School) <i>Reinforcement Learning Teaching Assistant (Barcelona, Spain)</i>

2019-2021 Oct. 2020 - Sept. 2021	JEDI Junior Enterprise (JEDI UPC) <i>President (Barcelona, Spain)</i> <ul style="list-style-type: none"> · Had the honor to present the candidature and receive a prize of €1,000 for the best <i>Student Association in Education</i> at the <i>Polytechnic University of Catalonia</i> (UPC). · Arranged collaborations with other associations from the <i>Polytechnic University of Catalonia</i> (UPC) and with organizations from the JE Network, at National and European levels, such as CEJE – the <i>Spanish Confederation of Junior Enterprises</i>, and <i>Junior Enterprises Europe</i> (JEE).
Feb. 2020 - Jun. 2021	<i>Instructor at 40-hour Machine Learning and Python course (Barcelona, Spain)</i> <ul style="list-style-type: none"> · Adapted the course for online teaching due to the coronavirus pandemic and tutored students through online platforms. · Adapted materials for a blind student and guided them throughout the course.
Aug. 2019 - Jun. 2021 Sept. 2019 - Oct. 2020	<i>Front-end developer (Barcelona, Spain)</i> <i>Vice-President & Secretary (Barcelona, Spain)</i> <ul style="list-style-type: none"> · Directed the organization of JEDI Academy courses, Winter edition 2020. · Organized bimonthly workshops on Tech topics with +20 attendees at the <i>Barcelona School of Informatics</i> (FIB). Ran introductory R language workshop. · Represented the Junior Enterprise in several Tech & startup events, such as <i>Tech Spirit Barcelona</i> and <i>SmartMobility Congress</i>.
Jun. 2019 - Feb. 2020	<i>Teaching Assistant at 40-hour Machine Learning and Python course (Barcelona, Spain)</i>
2018-2021 Nov. 2020 - Jul. 2021	FIB Visiona <i>President & Main Organizer (Barcelona, Spain)</i> <ul style="list-style-type: none"> · Donated €7,500 on scholarships for <i>Barcelona School of Informatics</i>' students and approved to donate €12,000 on more scholarships for the academic year 2021-2022.
Oct. 2018 - present	<i>Co-founder & Board Member (Barcelona, Spain)</i> <ul style="list-style-type: none"> · Co-founded FIB Visiona association, in charge of connecting UPC students with Tech companies.

VOLUNTEERING

2022-2024 Oct. 2023 - May 2024	UC Berkeley <i>Social Chair at Computer Science Graduate Entrepreneurs (CSGE) (Berkeley, CA)</i> <ul style="list-style-type: none"> · In charge of organizing mixers to collect ideas, experience, and connections that transfer from generation to generation of entrepreneurial Berkeley CS graduate students and alumni.
Sep. 2023 - Dec. 2023	<i>Berkeley AI Research (BAIR) undergraduate mentor (Berkeley, CA)</i> <ul style="list-style-type: none"> · Mentorship program to encourage, inspire, and support undergraduates in embarking on a career in research, and more generally support students who aim for a career in AI, research or otherwise.
Oct. 2022 - Nov. 2022	<i>Reviewer for the Equal Access to Application Assistance (EAAA) Program (Remote)</i> <ul style="list-style-type: none"> · Helped equalizing access guidance on the higher degree application process.
2017-2020 Oct. 2018 - Aug. 2021	Universitat Politècnica de Catalunya (UPC) <i>Student representative at the Standing Committee (Barcelona, Spain)</i>

- Elected by *Barcelona School of Informatics*' Board members. The Standing Committee is the executive and permanent representative of the School Board. Responsibilities included discussing the most important decisions of the School.

Oct. 2018 -
Aug. 2021

Student representative at the School Board (Barcelona, Spain)

- Elected by *Barcelona School of Informatics*' student body. The School Board is the governing body of the School. The main responsibility was to represent the opinion of all the students from the School.

Summers
2018, 2019

Assistant at the Summer Course of Algorithmics and Programming (Barcelona, Spain)

Oct. 2017 -
Mar. 2019

Student representative at CAGCED (Barcelona, Spain)

- Member and first student representative at the *Academic Committee of the Data Science and Engineering Degree* (CAGCED).

HONORS & AWARDS

2024 Grant	H2H8 Graduate Research Grant to Advance Humanity (\$10,000).
2024 Award	EECS Evergreen Award for Undergraduate Researcher Mentoring (\$1,400).
2024 Fellowship	AI Research Fellowship Program at Bain Capital Ventures (BCV).
2024 Award	1st place at the National Security Hackathon by Shield Capital, In-Q-Tel, Anduril, and more.
2024 Grant	Berkeley Chapter of Sigma Xi Grant-in-Aid-of-Research (GIAR) for a proposal on a foundational model for precision medicine (\$700).
2024 Award	1st place at the AGI House hackathon on LLM & Vector Search by MongoDB.
2023 Scholarship	Samuel Silver Memorial Scholarship for research in genealogy (\$1,000).
2022 Award	BAIR First Year Research Ignition Award (\$5,000).
2022 Award	1st place at the Associated Graduate Students (AGS) Symposium 2022 at UCI in the “ <i>Astronomy, Physics, Math, Computer Science</i> ” track.
2022 Fellowship	Fellowship for CS Ph.D. program by the EECS Department, University of California, Berkeley.
2021 Fellowship	CS Department Dean’s Fellowship for AY 21/22, Donald Bren School of Information and Computer Sciences – in recognition of outstanding research potential (\$10,000).
2021 Fellowship	Fellowship for CS Ph.D. program by the Department of Computer Science, UC Irvine.
2020 Award	Represented and received the <i>Best Student Association in Education</i> Award at the Polytechnic University of Catalonia (UPC).
2020 Award	Received a “ <i>Matricula de Honor</i> ” academic honor for an excellent research project on Deep Audio Steganography.
2020 Award	Nominated for the <i>Dona TIC Award</i> (2nd place), as a recognition for my contributions to the STEM world of new technologies and as a role model to young women.
2018 Award	Received a “ <i>Matricula de Honor</i> ” academic honor for obtaining a 10/10 in the Parallelism and Distributed Systems course.
2017 Award	Awarded for the Best High School research project in <i>La Selva</i> about video game development, at the “ <i>IV Mostra de Treballs de Recerca</i> ”.
2017 Award	Finished High School with Honors (“ <i>Matricula de Honor</i> ” academic honor).

MEMBERSHIPS

2024-pres.	Member of <i>Founders, Inc.</i> , a community of startup founders focused on emerging tech.
2024-pres.	Member of <i>Inception Studio</i> , a nonprofit accelerator and community for GenAI founders.
2024-pres.	Member of the <i>International Society of Genetic Genealogy</i> (ISOGG).
2021-pres.	Member of the <i>American Society of Human Genetics</i> (ASHG).
2021-pres.	Member of the <i>Computer Vision Foundation</i> (CVF).
2023-2024	Associate member of the <i>Sigma Xi, The Scientific Research Honor Society</i> ($\Sigma\Xi$).
2022-2024	Member of the <i>Association for Computing Machinery</i> (ACM).

2018-2020	Member of the <i>Barcelona School of Informatics Student Delegation</i> (DEFIB).
2017-2018	Member of the <i>TelecomBCN Student Delegation</i> (DAT), of the <i>Barcelona School of Telecommunications Engineering</i> (ETSETB).

TALKS

2024	[Upcoming] Interview at MongoDB TV in San Francisco, CA: <i>From Hackathon to Startup</i> .
2024	Speaker at Internship Rapid Talk Jam @ Bay Innovative Signal Hackers (BISH) Bash by Adobe in San Francisco, CA: <i>Image-in-Audio Deep Steganography</i> .
2024	Invited Speaker at SF technical happy hour series by Comet ML in San Francisco, CA: <i>How AI Unlocks the Ancestral Story – AI for Genealogy & Population Genetics</i> .
2024	Invited Speaker at AI in Media and Entertainment Aiify.io Summit in San Mateo, CA: <i>State of the Art GAN Inversion & Image Morphing</i> .
2024	Invited Speaker at Inception Studio + regenAI event by HypeFactor in San Francisco, CA: <i>How AI Unlocks the Ancestral Story – Advanced Methods in Population Genetics</i> .
2024	Invited Speaker at IdeaSoft AI Hub: State-of-the-Art GAN Inversion and Image Editing .
2024	Master of ceremonies at The AI Rabbit Hole – AI Conference in San Francisco, CA.
2024	Invited Speaker at IE Immersion Week by UC Berkeley SCET in Berkeley, CA: <i>Emerging Technology: GenAI: “Three Cutting-Edge Use Cases for Generative AI”</i> .
2024	Invited Speaker at Computer Visionaries Meetup by Leap Labs in San Francisco, CA: <i>State-of-the-Art GAN Inversion and Image Editing</i> .
2024	Invited Speaker at the 1st DevOps for GenAI MongoDB hackathon in San Francisco, CA: <i>LLM embedding-based search within log files</i> .
2024	Invited Speaker at Women in Tech Meetup in San Francisco, CA: <i>AI + Population Genetics and Genealogy</i> .
2024	Live Roundtable Discussion at UC Berkeley in Berkeley, CA: <i>Demystifying PhD Programs</i> .
2023	Talk at DLBCN 2023 in Barcelona, Spain: <i>Adversarial Learning for Feature Shift Detection and Correction</i> .
2023	Talk at WiCSE Berkeley-Stanford Meetup 2023 in Berkeley, CA, USA: <i>Deep Steganography</i> .
2023	Invited Speaker at the Research Panel in Berkeley, CA, USA: <i>Machine Learning @ Berkeley</i> .
2023	Lightning Talk at AAAI 2023 in Washington, D.C., USA: <i>Maestro: A Gamified Platform for Teaching AI Robustness</i> .
2022	Talk at DLBCN 2022 in Barcelona, Spain: <i>PixInWav: Hiding Pixels in Audio</i> .
2022	Talk at AGS 2022 in Irvine, CA, USA: <i>PixInWav: Hiding Pixels in Audio</i> .
2021	Talk at Ioannidis Lab Summer Retreat in Stanford, CA, USA/virtual: <i>Autoencoders for Population Genetics</i> .
2021	Talk at Barcelona Google Developer Student Clubs: Introduction to Machine Learning with DSC UPC (https://gdsc.community.dev/j/7m795shsefhsz/).
2021	Live Roundtable Discussion at STEM Talks Menorca in Menorca, Spain/virtual, organized by Google Developers Group Menorca.
2019	Workshop Barcelona School of Informatics (FIB) in Barcelona, Spain: <i>Introduction to R</i> .

REVIEWER & WORKSHOP SERVICE

2024	Organizer of <i>Machine Learning for Earth System Modeling</i> (MLESIM) at the 2024 <i>International Conference on Machine Learning</i> (ICML), organized in Vienna, Austria.
2023	Reviewer at the <i>Women in Computer Vision Workshop</i> (WiCV) at the <i>IEEE/CVF Computer Vision and Pattern Recognition Conference</i> (CVPR).

EVENTS ORGANIZED

2024 Oct. 17 th	[Upcoming] OpenAI Day in San Francisco, CA: co-host of half-day event at the OpenAI HQ with AI portfolio founders from Berkeley SkyDeck, investment partners, and researchers affiliated with the Berkeley AI Research (BAIR) laboratory.
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2024 Apr. 19th	The AI Rabbit Hole – AI Conference in San Francisco, CA: organizer of tier 1 AI conference with +500 participants (founders, VCs, corporate leaders, and researchers). Raised +\$70,000 in sponsorship (including DVC, AWS for Startups, Nebius AI, and Craft Ventures).
2024 Apr. 13-14th	The AI Rabbit Hole – Hackathon at the AGI House in Hillsborough, CA: host of the <i>AI Wonderland Hackathon</i> with +130 participants . Raised +\$20,000 in sponsorship (including DVC, Tune AI, Craft Ventures).
2023 Nov. 24-26th	Techstars Startup Weekend SF AI in San Francisco, CA: organizer of Techstars Startup Weekend on Thanksgiving weekend with +150 participants , 17 teams, 5 workshops, 2 talks (Doordash and Meta Research), 32 ideas pitched. Raised +\$10,000 in sponsorship.
2023 Nov. 17th	AI Nexus: From Research to Investment in San Francisco, CA: organizer of a mixer of +70 participants comprising EECS PhD students from UC Berkeley, Haas MBA students, and founders from Berkeley SkyDeck), 5 panelists (founders from Berkeley SkyDeck + PhDs from UC Berkeley, and VC from Mayfield Fund). +\$6,000 funding for the event.
2021 May 3-7th	4-day FIB Visiona Spring Career Fair in Barcelona, Spain: directed 10-people team for the second online edition of the FIB Visiona career fair with +200 attendees , 12 companies, 75 recruiters, and €23,000 in sponsorships raised.
2020 Dec. 8-10th	3-day FIB Visiona Fall Career Fair in Barcelona, Spain: directed 4-people team for the first online edition of the FIB Visiona career fair with +150 attendees , 40 recruiters, and €12,000 in sponsorships raised.
2019 Oct. 11-13th	36-hour hackathon HackUPC in Barcelona, Spain: led brand redesign in 30-person team for HackUPC 2019, Spain’s largest and Europe’s largest student hackathon with +700 attendees , 16 sponsors (including McKinsey & Company, Facebook, and Hewlett-Packard), with the support of the City Council of Barcelona.
2019 Apr. 10th	FIB Visiona Spring Career Fair in Barcelona, Spain: co-directed 10-people team for the first edition of the FIB Visiona career fair with +200 attendees , 126 recruiters, and €100,000 in sponsorships raised. Sponsors included: Accenture, CaixaBank.

PUBLICATIONS & PREPRINTS

(selected publication are marked in [blue](#))

- [Pub1] Marta R. Costa-jussà, Roger Creus, Oriol Domingo, Albert Domínguez, Miquel Escobar, Cayetana López, Marina Garcia, and **Margarita Geleta**. **MT-Adapted Datasheets for Datasets: Template and Repository**. <https://arxiv.org/abs/2005.13156>, 2020.
- [Pub2] **Margarita Geleta**, Cristina Punti, Kevin McGuinness, Jordi Pons, Cristian Canton, and Xavier Giro i Nieto. **PixInWav: Residual Steganography for Hiding Pixels in Audio**. In *ICASSP 2022 – 2022 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pages 2485–2489, 2022.
- [Pub3] Maria Perera, Daniel Mas-Montserrat, Míriam Barrabés, **Margarita Geleta**, Xavier Giró-i Nieto, and Alexander G. Ioannidis. **Generative Moment Matching Networks for Genotype Simulation**. In *2022 44th Annual International Conference of the IEEE Engineering in Medicine Biology Society (EMBC)*, pages 1379–1383, 2022.
- [Pub4] **Margarita Geleta**, Jiachen Xu, Junlin Wang Manikanta Loya, Sameer Singh, Zhou Li, and Sergio Gago-Masague. **Maestro: A Gamified Platform for Teaching AI Robustness**. In *The Thirteenth Symposium on Educational Advances in Artificial Intelligence (EAAI-23) in the Association for the Advancement of Artificial Intelligence Conference (AAAI)*, 2023.
- [Pub5] Míriam Barrabés*, Daniel Mas-Montserrat*, **Margarita Geleta**, Xavier Giró i Nieto, and Alexander G. Ioannidis. **Adversarial Learning for Feature Shift Detection and Correction**. In *Neural Information Processing Systems (NeurIPS)*, New Orleans, USA, 12/2023 In Press.
- [Pub6] Jaume Ros*, **Margarita Geleta***, Jordi Pons, and Xavier Giro i Nieto. **Towards Robust Image-in-Audio Deep Steganography**. (Available at ArXiv), 2023.
- [Pub7] Qianli Feng, Viraj Shah, Raghudeep Gadde, **Margarita Geleta**, Pietro Perona, and Aleix M. Martinez. **Near Perfect GAN Inversion**. (Under legal review. Further information upon request), 2023.

- [Pub8] Margarita Geleta, Daniel Mas Montserrat, Carlos D. Bustamante, Xavier Giró i Nieto, and Alexander G. Ioannidis. **Autoencoders for Genomics**. (Submitted. Awaiting decision), 2023.
- [Pub9] Jerry Lin*, Sungduk Yu, Liran Peng, Tom Beucler, Eliot Wong-Toi, Zeyuan Hu, Pierre Gentine, Margarita Geleta, and Mike Pritchard. **Sampling Hybrid Climate Simulation at Scale to Reliably Improve Machine Learning Parameterization**. (Submitted. Awaiting decision), 2024.
- [Pub10] Brandon Woodard*, Margarita Geleta*, Rhonda Wilson, and Andrea Fanelli. **TBD (Dolby internship paper)**. (Coming out soon), 2024.

ABSTRACTS & POSTERS

- [Abs1] Margarita Geleta, Cristina Puntí Alvarez, Kevin McGuinness, Jordi Pons, Cristian Canton, and Xavier Giró-i Nieto. **Residual Steganography for Hiding Pixels in Audio**. In *9th Women in Computer Vision (WiCV) 2021 in conjunction with Conference on Computer Vision and Pattern Recognition (CVPR) [not proceedings]*, Virtual, June.
- [Abs2] Margarita Geleta, Daniel Mas-Montserrat, Carlos Bustamante, Xavier Giró-i Nieto, and Alexander Ioannidis. **Deep Variational Autoencoders for Population Genetics**. In *Exhibition at the American Society of Human Genetics Meeting*, Virtual, October 2021.
- [Abs3] Margarita Geleta, Maria Perera, Daniel Mas-Montserrat, Míriam Barrabés, Xavier Giró-i Nieto, and Alexander Ioannidis. **Generation of Synthetic Genotypes with Neural Networks**. In *Exhibition at the American Society of Human Genetics Meeting*, Los Angeles, California, USA, October 2022.
- [Abs4] Margarita Geleta, Jiachen Xu, Manikanta Loya, Junlin Wang, Sameer Singh, Zhou Li, and Sergio Gago-Masague. **Design Factors of Maestro: A Serious Game for Robust AI Education**. In *Proceedings of the 54th ACM Technical Symposium on Computer Science Education V. 2*, SIGCSE 2023, page 1318, New York, NY, USA, 2023. Association for Computing Machinery.
- [Abs5] Jaume Ros*, Margarita Geleta*, Jordi Pons, and Xavier Giró-i Nieto. **Towards Robust image-in-audio Deep Steganography**. In *11th Women in Computer Vision (WiCV) 2023 in conjunction with Conference on Computer Vision and Pattern Recognition (CVPR) [not proceedings]*, Virtual, June 2023.

THESES

- [Ths1] Margarita Geleta. Bachelor Thesis: **Unsupervised Learning with Applications in Genomics**. <https://upcommons.upc.edu/handle/2117/353817>, 2021.

TECHNICAL SKILLS

Programming	C++, C, C#, Python, R, Dart.	Scripting	JS, PHP, Bash.
Markup	HTML5, CSS3.	Frameworks	Unity3D, PyTorch, Flutter, ReactJS.
Databases	PostgreSQL, SQLite, Neo4j.		

LANGUAGES

Spanish, Catalan & Russian: native.

English: proficient in spoken and written English. TOEFL iBT, *November 2020*.

Appointment number: 9733 7112 0335 0471.