Margarita Geleta

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PARTICULARS

EDUCATION

2022-present **University of California, Berkeley**
Ph.D. in Computer Science
· **Courses (letter graded)**: *Machine Learning, Deep Neural Networks, Computer Vision, Security in Computer Systems, Natural Language Processing, Human-Computer Interaction (HCI) Research*; **(pass/no pass)**: *Theoretical Statistics*; **(audited)**: *Introduction to Computer Vision and Computational Photography.*
· **Haas School of Business Courses (letter graded)**: *Leading High Impact Teams, Lean Transfer (Lean Startup).*

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*; **(pass/no pass)**: *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 interests span the areas of *deep learning* and *computer vision* (CV). I have a specific interest in *generative modelling,* and *deep learning* applied to *population genetics* and *genealogy.*

EXPERIENCE

RESEARCH EXPERIENCE

2022-present
Aug. 2022 -
present

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

Graduate Student Researcher *(Berkeley, CA)*

· Published and showcased research at the *Conference on Neural Information Processing Systems* (NeurIPS) 2023 [Pub8], *American Society of Human Genetics* (ASHG) meetup 2022 [Abs3].

2021-2022
Oct. 2021 -
Aug. 2022

Engaging Technology and Application Design Lab (UC Irvine)

Graduate Student Researcher & Teaching Assistant *(Irvine, CA)*

· Maintainer of the NSF-funded *Maestro* project [Pub4], providing a service for cybersecurity educational purposes in the domain of adversarial attacks and defenses.
· Teaching Assistant in CS175 (Project in AI): 147 undergraduate students.

2021 Jun. 2021 - Sept. 2021	**Bustamante Lab (Stanford University)**
	Full-time Research Assistant *(Remote)*
	· Published and showcased research at [TBA journal] [Pub7], and the *American Society of Human Genetics* (ASHG) meetup 2021 [Abs2].
Feb. 2021 - Jun. 2021	***Part-time Research Intern*** *(Remote)*
	· Conducted my Bachelor Thesis "*Unsupervised Learning with Applications in Genomics*" [Ths1].
2020-2021 Sept. 2020 - Mar. 2021	**Image Processing Group (GPI)**
	Independent Researcher *(Barcelona, Spain)*
	· Published and showcased research at the *Women in Computer Vision* workshops (in conjunction with the *Conference on Computer Vision and Pattern*) CVPR-WiCV 2021 [Abs1] and CVPR-WiCV 2022 [Abs5], and the *International Conference on Acoustics, Speech, & Signal Processing* (ICASSP) 2022 [Pub3].

PROFESSIONAL EXPERIENCE

2024 May 2024 - Aug. 2024	**[Upcoming] Dolby Laboratories, Inc.**
	Sound Tech R&D Intern @ Advanced Technology Group *(San Francisco, CA)*
	· [TBD] Early-stage conceptual models.
2022-2023 May 2023 - Aug. 2023	**Amazon.com**
	Applied Scientist @ Home Innovation Team *(Seattle, WA)*
	· Worked with large-scale Generative Models (GANs, diffusion models), GAN inversion techniques and image-to-image translation.
Jun. 2022 - Aug. 2022	***Applied Scientist @ Home Innovation Team*** *(Seattle, WA)*
	· Worked with large-scale Generative Models (GANs), GAN inversion techniques [Pub6] and deep harmonization.
2021 Jun. 2021 - Jul. 2021	**UPC School of Professional & Executive Development (UPC School)**
	Reinforcement Learning Teaching Assistant *(Barcelona, Spain)*
2019-2021 Oct. 2020 - Sept. 2021	**JEDI Junior Enterprise (JEDI UPC)**
	President *(Barcelona, Spain)*
	· Had the honor to present the candidature and receive a prize of €1,000 for the best *Student Association in Education* at the *Polytechnic University of Catalonia* (UPC). · Arranged collaborations with other associations from the *Polytechnic University of Catalonia* (UPC) and with organizations from the JE Network, at National and European levels, such as CEJE – the *Spanish Confederation of Junior Enterprises*, and *Junior Enterprises Europe* (JEE).
Feb. 2020 - Jun. 2021	***Instructor at 40-hour Machine Learning and Python course*** *(Barcelona, Spain)*
	· 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	***Front-end developer*** *(Barcelona, Spain)*

Sept. 2019 - Oct. 2020	**Vice-President & Secretary** *(Barcelona, Spain)*
	· Directed the organization of JEDI Academy courses, Winter edition 2020.
	· Organized bimonthly workshops on Tech topics with +20 attendees at the *Barcelona School of Informatics* (FIB). Ran introductory R language workshop.
	· Represented the Junior Enterprise in several Tech & startup events, such as *Tech Spirit Barcelona* and *SmartMobility Congress*.
Jun. 2019 - Feb. 2020	**Teaching Assistant at 40-hour Machine Learning and Python course** *(Barcelona, Spain)*
2018-2021	**FIB Visiona**
Nov. 2020 - Jul. 2021	**President & Main Organizer** *(Barcelona, Spain)*
	· Donated €7,500 on scholarships for *Barcelona School of Informatics'* students and approved to donate €12,000 on more scholarships for the academic year 2021-2022.
Oct. 2018 - present	**Co-founder & Board Member** *(Barcelona, Spain)*
	· Co-founded FIB Visiona association, in charge of connecting UPC students with Tech companies.

VOLUNTEERING

2022-2024	**UC Berkeley**
Oct. 2023 - May 2024	**Social Chair at Computer Science Graduate Entrepreneurs (CSGE)** *(Berkeley, CA)*
	· 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	**Berkeley AI Research (BAIR) undergraduate mentor** *(Berkeley, CA)*
	· 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	**Reviewer for the Equal Access to Application Assistance (EAAA) Program** *(Remote)*
	· Helped equalizing access guidance on the higher degree application process.
2017-2020	**Universitat Politècnica de Catalunya (UPC)**
Oct. 2018 - Aug. 2021	**Student representative at the Standing Committee** *(Barcelona, Spain)*
	· 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

2023	Samuel Silver Memorial Scholarship for research in genealogy ($1,000).
2022	BAIR First Year Research Ignition Award ($5,000).
2022	1st place at the Associated Graduate Students (AGS) Symposium 2022 at UCI in the "*Astronomy, Physics, Math, Computer Science*" track.
2022	Fellowship for CS Ph.D. program by the EECS Department, University of California, Berkeley.
2021	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 for CS Ph.D. program by the Department of Computer Science, UC Irvine.
2020	Represented and received the *Best Student Association in Education* Award at the Polytechnic University of Catalonia (UPC).
2020	Received a *"Matricula de Honor"* academic honor for an excellent research project on Deep Audio Steganography.
2020	Nominated for the *Dona TIC Award* (2nd place), as a recognition for my contributions to the STEM world of new technologies and as a role model to young women.
2018	Received a *"Matricula de Honor"* academic honor for obtaining a 10/10 in the Parallelism and Distributed Systems course.
2017	Awarded for the Best High School research project in *La Selva* about video game development, at the *"IV Mostra de Treballs de Recerca"*.
2017	Finished High School with Honors (*"Matricula de Honor"* academic honor).

MEMBERSHIPS

2023-pres.	Associate member of the *Sigma Xi, The Scientific Research Honor Society* (ΣΞ).
2022-pres.	Member of the *Association for Computing Machinery* (ACM).
2021-2023	Member of the *American Society of Human Genetics* (ASHG).
2021-pres.	Member of the *Computer Vision Foundation* (CVF).
2018-2020	Member of the *Barcelona School of Informatics Student Delegation* (DEFIB).
2017-2018	Member of the *TelecomBCN* Student Delegation (DAT), of the *Barcelona School of Telecommunications Engineering* (ETSETB).

TALKS

2023	**Talk at DLBCN 2023** in Barcelona, Spain: *Adversarial Learning for Feature Shift Detection and Correction.*
2023	**Talk at WiCSE Berkeley-Stanford Meetup 2023** in Berkeley, CA, USA: *Deep Steganography.*
2023	**Invited Speaker at the Research Panel** in Berkeley, CA, USA: *Machine Learning @ Berkeley.*
2023	**Lightning Talk at AAAI 2023** in Washington, D.C., USA: *Maestro: A Gamified Platform for Teaching AI Robustness.*
2022	**Talk at DLBCN 2022** in Barcelona, Spain: *PixInWav: Hiding Pixels in Audio.*
2022	**Talk at AGS 2022** in Irvine, CA, USA: *PixInWav: Hiding Pixels in Audio.*
2021	**Talk at Ioannidis Lab Summer Retreat** in Stanford, CA, USA/virtual: *Autoencoders for Population Genetics.*
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: *Introduction to R.*

REVIEWER SERVICE

2023	Reviewer at the *Women in Computer Vision Workshop* (WiCV) at the *IEEE/CVF Computer Vision and Pattern Recognition Conference* (CVPR).

EVENTS ORGANIZED

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 +$10K 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). +$6K 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

[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] 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.

[Pub3] **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.

[Pub4] **Margarita Geleta**, Jiacen 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] Jaume Ros*, **Margarita Geleta***, Jordi Pons, and Xavier Giro i Nieto. Towards robust image-in-audio deep steganography. (Submitted. Awaiting decision), 2023.

[Pub6] Qianli Feng, Viraj Shah, Raghudeep Gadde, **Margarita Geleta**, Pietro Perona, and Aleix M. Martinez. Near perfect gan inversion. (Submitted. Awaiting decision), 2023.

[Pub7] **Margarita Geleta**, Daniel Mas Montserrat, Carlos D. Bustamante, Xavier Giró i Nieto, and Alexander G. Ioannidis. Autoencoders for genomics. (Submitted. Awaiting decision), 2023.

[Pub8] 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.

ABSTRACTS AND 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. `https://www.researchgate.net/publication/365072985_Residual_Steganography_for_Hiding_Pixels_in_Audio`, 2021.

[Abs2] **Margarita Geleta**, Daniel Mas-Montserrat, Carlos Bustamante, Xavier Giró-i Nieto, and Alexander Ioannidis. Deep variational autoencoders for population genetics. `https://www.researchgate.net/publication/364357930_Deep_Variational_Autoencoders_for_Population_Genetics`, 2021.

[Abs3] **Margarita Geleta**, Maria Perera, Daniel Mas-Montserrat, Míriam Barrabés, Xavier Giró-i Nieto, and Alexander Ioannidis. Poster: Generation of synthetic genotypes with neural networks. `https://www.researchgate.net/publication/365052112_Generation_of_Synthetic_Genotypes_with_Neural_Networks`, 2022.

[Abs4] **Margarita Geleta**, Jiacen 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. `https://www.researchgate.net/publication/371638577_Towards_Robust_Image-in-Audio_Deep_Steganography_Poster/related`, 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**	Django, Flutter, ReactJS.
Databases	PostgreSQL, SQLite.		

LANGUAGES

Spanish, Catalan & Russian: native.
English: proficient in spoken and written English. TOEFL iBT, *November 2020*.
Appointment number: 9733 7112 0335 0471.