

Margarita Geleta

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PARTICULARS

EDUCATION

- 2021-present** **University of California, Irvine (UCI)**
Ph.D. in Computer Science
· **Courses:** *Artificial Intelligence, Scientific Computing, Machine Learning.*
- 2017-2021** **Universitat Politècnica de Catalunya (UPC)**
Bachelor of Data Science and Engineering
· Active member in the *Barcelona School of Informatics* (FIB) governance.
· **Courses:** *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 *Data Science*, *Bioinformatics* and *Machine Learning*, along with its subdomains *Deep Learning* and *Natural Language Processing* (NLP). I have a specific interest in *Deep Learning* applied to *Genomics*, audio & acoustic domain, *Signal Processing*, *Audio Feature Extraction* and *Audio Steganography*. Also, my interests fall in the field of *Sentiment & Toxicity Analysis* and *Hate Speech Detection*.

EXPERIENCE

RESEARCH EXPERIENCE

- 2021 - present** **Bustamante Lab (Stanford University)**
Sept. 2021 - present DL Research Mentor
· Mentorship of new lab students on genomic data simulation and compression.
- Jun. 2021 - Sept. 2021 Full-time DL Research Intern
· Developed a pipeline for compression of *Single Nucleotide Polymorphisms* (SNP) datasets.
· Explored Discrete-Space (*Multi-Bernoulli* and *Vector-Quantized*) Autoencoders for the purpose of SNP data compression.
· Got the Abstract accepted to ASHG 2021.
- Feb. 2021 - Jun. 2021 Part-time DL Research Intern
· Explored novel Deep Learning techniques such as *Variational Autoencoders* (VAEs) with genomic data in a focus in dimensionality reduction, compression, privacy, and data simulation.
· Conducted my Bachelor Thesis titled *Unsupervised Learning with Applications in Genomics*.
- Sept. 2020 - Mar. 2021** **Image Processing Group (GPI)**
7 months *DSP & DL Researcher*
· Implemented classic Audio Steganography methods from the psychoacoustic approach - *LSB algorithm*, *Phase Coding* and *Echo Hiding*.
· Investigated Deep Learning architectures for Audio Steganography and trained an Audio Auto-encoder using *Short-Time Cosine Transform* for *Audio Feature Extraction*.
· Got the Extended Abstract accepted to WiCV 2021.

PROFESSIONAL EXPERIENCE

2021 Jun. 2021 - Jul. 2021	UPC School of Professional & Executive Development (UPC School) <i>Reinforcement Learning (RL) Lab Assistant</i> <ul style="list-style-type: none">· Assisted students at the RL sessions of the Postgraduate Course in Artificial Intelligence with Deep Learning (AIDL). Topics covered include: <i>Q-Learning, DQN, Policy Gradients, Proximal Policy Optimization</i>.
2019-2021 Feb. 2020 - Jun. 2021	JEDI Junior Enterprise (JEDI UPC) <i>Instructor at Machine Learning and Python course (40 h)</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	<i>Front-end developer</i> <ul style="list-style-type: none">· Programmed the interface of a web-application for <i>Area Cooling Solutions S.A.</i> company.· Overhauled the output of a microcontroller IMU sensor and upgraded the web-application visualizations.
Jun. 2019 - Feb. 2020	<i>Teaching Assistant at Machine Learning and Python course (40 h)</i> <ul style="list-style-type: none">· Prepared coursework on <i>Multidimensional Scaling, Machine Learning</i> and <i>Optimization</i>.· Helped students with <i>Exploratory Data Analysis</i> in their projects.
May 2020 - Sept. 2020 4 months	ProxiShop <i>Co-founder & Developer</i> <ul style="list-style-type: none">· Developed a trading multi-platform e-commerce solution for local farmers and small businesses to reactivate the economy in Catalonia in times of the pandemic and the confinement.· Presented the project in several startup competitions, among which - <i>SmartCatalonia Challenge 2020</i> and <i>RuralApps 2020</i>, all of them funded by the Government of Catalonia.· Joined the 1000 European Initiatives by <i>Junior Enterprises Europe</i> (JEE) & <i>Junior Enterprises Global</i> (JEG).

LEADERSHIP & POSITION OF RESPONSIBILITY

2019-2021 Oct. 2020 - Sept. 2021	JEDI Junior Enterprise (JEDI UPC) <i>President</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).
Sept. 2019 - Oct. 2020	<i>Vice-President & Secretary</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>.

2018-2021

Nov. 2020 -
Jul. 2021

FIB Visiona

President & Main Organizer

- Directed 4-people team for the first online edition of the FIB Visiona career fair (Autumn 2020) with more than 150 attendees, 40 recruiters and €12,000 in sponsorships raised.
- Directed 10-people team for the second online edition of the FIB Visiona career fair (Spring 2021) with more than 200 attendees, 12 companies, 75 recruiters and €23,000 in sponsorships raised.
- Donated €7,500 on scholarships for *Barcelona School of Informatics*' students and approved to donate €12,000 on more scholarships for the AY 21/22.

Oct. 2018 -
present

Co-founder & ExBo Member

- Co-founded FIB Visiona association, in charge of connecting UPC students with Tech companies.
- Co-directed 10-people team for the first edition of the FIB Visiona career fair (Spring 2019) with more than 200 attendees, 126 recruiters and €100,000 in sponsorships raised.

2017-2021

Oct. 2018 -
Aug. 2021

Universitat Politècnica de Catalunya (UPC)

Student representative at the Standing Committee

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

Oct. 2018 -
Aug. 2021

Student representative at the School Board

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

Oct. 2017 -
Mar. 2019

Student representative at CAGCED

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

2020

Sept. 2020 -
Nov. 2020

Junior Enterprises Global (JEG)

Partnerships Manager

- Worked on the Value Proposition, support documents and contact list.

ACTIVITIES**2017-2020**

Oct. 2018 -
Nov. 2020

Universitat Politècnica de Catalunya (UPC)

Member of the Barcelona School of Informatics Student Delegation (DEFIB)

- Active member at the *Communication Commission*.
- Designed posters to highlight the contributions of female scientists and engineers, which now remain at the School's Museum.

Oct. 2017 -
May 2018

Member of the TelecomBCN Student Delegation (DAT)

- Of the *Barcelona School of Telecommunications Engineering* (ETSETB).

VOLUNTEERING**2019-2020**

Mar. 2019 -
Feb. 2020

HackUPC

Designer & Organizer

- Led brand redesign in 30-person team for HackUPC 2019, Spain's largest student hackathon with 700 attendees. Designed web, merchandising and social network post templates.

2018-2019 Universitat Politècnica de Catalunya (UPC)

Summer
2019

Volunteer at the Summer Course of Algorithmics and Programming

- Assisted teenagers with learning C++ and Python and monitored the visit to the School's Museum.

Autumn
2019

Coach & Mentor

- Finished a *Coaching and Mentoring course* (10 h) at the *Polytechnic University of Catalonia* to become a mentor of Data Science & Engineering degree freshmen for seven weeks.

Summer
2018

Volunteer at the Summer Course of Algorithmics and Programming

- Assisted teenagers with learning C++ and Python and monitored the visit to the *Marenostrum 4* Supercomputer at the *Barcelona Supercomputer Center* (BSC).

RELEVANT PROJECTS

Nov. 2020 Forbidden Territories

2 weeks

Data Scientist & Developer

- Created a NLP multilingual model (7 languages) with contextual embeddings which detected sections in lyrics which had a high probability of being censored.
- Developed a web-application with *Lyric Censorship Analyzer* model deployment.
- Presented this project at the Sónar+D Innovation Challenge 2020.

Mar. 2020 ConfinApp Commerce

1 week

Front-end developer

- Designed a mobile application to promote the proximity commerce during the first stage of the confinement. This project has been one of the highlighted projects of Hackovid, a hackathon by the Government of Catalonia.

HONORS & AWARDS

2021	CS Department Dean's Fellowship for AY 21/22, Donald Bren School of Information and Computer Sciences - in recognition of outstanding research potential.
2021	Fellowship for CS Ph.D. program by the Department of Computer Science, UC Irvine.
2020	Received a " <i>Matricula de Honor</i> " academic honor for an excellent research project on Deep Audio Steganography.
2020	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	Received a " <i>Matricula de Honor</i> " academic honor for obtaining a 10/10 in the Parallelism and Distributed Systems course.
2017	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	Finished High School with Honors (" <i>Matricula de Honor</i> " academic honor).

MEMBERSHIPS

2021-pres.	Member of the <i>American Society of Human Genetics</i> (ASHG).
2021-pres.	Member of the <i>Computer Vision Foundation</i> (CVF).

PUBLICATIONS

- [1] **Margarita Geleta**, Cristina Puntí, Kevin McGuinness, Jordi Pons, Cristian Canton, and Xavier Giró i Nieto. Pixinwav: Residual steganography for hiding pixels in audio. <https://arxiv.org/abs/2106.09814>, 2021.
- [2] 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, 2020.

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 (Score 101), *November 2020*.
Appointment number: 9733 7112 0335 0471.