

Ari Peró

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EDUCATION

Massachusetts Institute of Technology (MIT)

Expected May 2025

B.S. in Urban Science & Planning with Computer Science and Music

Cambridge, MA

- **GPA:** 5.0/5.0 in-major, 4.8/5.0 overall

WORK EXPERIENCE

Senseable City Lab

Sep 2024 – May 2025

Research Scientist for Urban Innovation & Tree Health Monitoring

Cambridge, MA

- Develop and optimize deep learning models, including custom Mask R-CNN architectures, for segmentation and analysis of urban tree imagery. Extract tree health metrics like NDVI and canopy temperature depression from thermal and multispectral image data. Collaborate on novel approaches for autonomous urban forest monitoring.

Amazon Project Kuiper (Kuiper Manufacturing Enterprises)

Jun 2024 – Aug 2024

Embedded Software Development Engineer Intern

Seattle/Redmond, WA

- Boosted developer productivity by 15-20% and reduced codebase size by ~25% by designing a satellite gateway CLI using **Click**. Eliminated boilerplate, established compatibility with core team libraries, and contained the tool via Docker. Optimized interprocess communication by integrating Cap'n Proto formats and messaging bus structures.
- Developed and implemented a Rust- and C++-based feature to securely query and verify satellite bootloader public keys, addressing a critical security gap. Authored detailed technical documentation on security enhancements.

MIT Computer Science and Artificial Intelligence Laboratory

Jul 2023 – Sep 2024

Computer Vision Researcher ("Sociopolitical and technological impacts of data sharing")

Cambridge, MA

- Assess the impact of biodiversity data sharing on machine learning model performance, using PyTorch, TensorFlow, and Pandas to optimize predictive accuracy and extract ecological insights. Employ CUDA to accelerate processing of diverse, long-tailed species distributions. Execute and automate HPC tasks via Slurm and Bash scripts in a Unix/Linux environment. Manage version control with Git. Deploy models on Azure/GCP for scalable cloud operation.
- Prepared a position paper for the 41st International Conference on Machine Learning.

Talented Scholars Resource Room @ MIT Office of Minority Education

Apr 2023 – Jan 2024

Facilitator, Computer Programming Tutor

Cambridge, MA

- Provide support and resources to students in Python Programming and Discrete Math & Proof. Lead exam reviews, one-on-one tutoring sessions, study groups of 3-6 students, and weekly Problem Set Nights.

MIT Introduction to Technology, Engineering, & Science (MITES)

Jun 2023 – Aug 2023

MITES Summer Residential Teaching Assistant for "Humanities & Ethics in STEM"

Cambridge, MA

- Plan and lead recitations, office hours, and writing labs. Coordinate academic programming and social events.
- Further facilitate implementation of college-level humanities course through grading and one-on-one tutoring.
- Mentor a cluster of 9 students, offering guidance on college admissions and fostering emotional well-being.

MIT Office of Sustainability Research Fellowships

Sep 2022 – Nov 2022

Climate Communications Sustainability Researcher, Video Producer

Cambridge, MA

- Independently develop dynamic video content to communicate efforts outlined in MIT's Climate Action Plan and to highlight calls for even greater change. Make complex ideas into accessible content for a diverse audience.

The City of Miami Beach, Office of Resilience

Jan 2022

Climate Innovation Intern

Miami Beach, FL

- Develop the City's Private Property Adaptation Program for guiding flood mitigation improvements by structuring and conducting constituent focus groups and designing an online application portal for the program.
- Devise a map of the City's sustainability projects for the international Aspen Climate Convention and conference.

PROJECTS

Unsubscribe | unsubscribe.mit.edu | *React, Express, Node.js, MongoDB/Mongoose, Figma* Jan 2024

- Pioneered app with real-time updates and notifications on free food resources, currently hosting 500+ posts, using WebSocket and Socket.IO. Integrated secure authentication via OAuth/OpenID clients, Google Login API, and MIT Shibboleth. Designed a responsive multiplatform UI using Tailwind, MUI, ReactTimeAgo, and FullCalendar.
- **Won the Webby/People's Choice Award in the 2024 MIT WebLab web development competition.**

Data Visualization and Mapping for Indigenous Women Rising (IWR) Sep 2023 – Dec 2023

- Developed interactive dashboard using Tableau to visualize abortion fund data for IWR non-profit foundation. Created ArcGIS StoryMap showing geographic distribution of IWR's services across Native territories. Designed visualizations to demonstrate urgent demand for abortion care and IWR's capacity to serve clients. Implemented privacy-preserving measures to protect sensitive client information.

Who Polices Who? Mapping Police Geographies in Boston Feb 2023 – May 2023

- Conducted exploratory GIS analysis of spatial relationships between police officer residences and policing patterns in Boston. Used Python for data scraping and preprocessing of police incident reports. Created various maps and data visualizations to communicate findings on potential racial biases in policing distribution.

LEADERSHIP

Active Community Engagement: MIT Pre-Orientation Program Dec 2022 – Present

Program Coordinator (Priscilla King Gray Center for Public Service) Cambridge, MA

- A yearlong planning effort towards introducing first-years to Boston through volunteer placements.
- Design and facilitate interactive social justice workshops, lead cross-functional counselor training, and propel collaborative service ventures with local non-profits.

"PLEASURE" @ MIT Sep 2022 – Present

Peers Leading Education About Sexuality & Speaking Up for Relationship Empowerment: Educator Cambridge, MA

- Host PLEASURE events. Present workshops on topics like contraception or sexual health to athletes and FSILGs.

Native American and Indigenous Alliance (NAIA) @ MIT Mar 2022 – Present

American Indian Science and Engineering Society (AISES)

Membership Co-Lead, 2024 AISES National Conference Participant Cambridge, MA

- Dedicated towards the advancement and representation of the native student body at MIT. Function as a source of Indigenous culture, an advocate for native rights and causes, and a support network for our students and allies.

Society of Hispanic Professional Engineers *Region 7 (2020 – 2022), SHPE-MIT* since Sep 2022

- Develop the professional and academic skills of members by offering internship, networking, mentoring, and diversity awareness opportunities.

LGBTQ+ Advocacy Sep 2021 – Present

G(ay)@MIT President; Black & Pink MA Volunteer, Pen Pal; Gay Straight Alliance VP Cambridge, MA

- Direct social events, drive activism and represent undergraduates in high-level discussions with MIT's President.
- Provide crucial support, via correspondence, to three incarcerated transgender women. Organize youth meetings.

Students Demand Action: Miami Feb 2018 – Present

Leadership Board (Secretary, Membership Chair, Founding Member), Liaison to Moms Demand Miami, FL

- 600+ hours of civic engagement. Speak at leadership summits. Organize marches, meetings, voter registration drives, and community events to educate communities on the need for common sense gun law reform.
- Empower other students to recognize their political power and do the same. Equip peers with the tools, knowledge, and opportunities needed to pursue equity, equality, and overall change.

Environmental Advocacy Sep 2014 – Present

VP of Miami Sierra Student Coalition, GenCLEO Spokesperson, Miami Sierra Club since 2014

- Foster a network of student leaders working for sustainable communities through policy and volunteer efforts.

Student Government Association May 2020 – June 2021

Senior Class President Miami, FL

- Develop communication channels for and promote constructive dialogues between students, faculty, and admin.
- Innovate mechanisms for student expression and advocacy in school affairs. Implemented new virtual club fair.

Cutler Bay Town Hall Youth Council Committee Nov 2018 – Mar 2021

Chair, Mayor's appointee Cutler Bay, Miami, FL

- Make legislative recommendations to the Town Council. Enacted anti-vaping legislation. Created new bike lanes.

GENERAL SERVICE

Community Servings

Aug 2021 – Sep 2023

Kitchen Aide

Boston, MA

- Prep medically tailored, nutritious meals to low-income and chronically/critically-ill individuals and their families.

Whitelock Community Garden & Farm Stand

May 2022 – Aug 2022

Volunteer

Baltimore, MD

- Collaborate with other farm volunteers to plant, grow, and harvest food. Manage water irrigation and compost.
- Maintain access to affordable, organic produce in my local neighborhood food desert.

Muddy Water Initiative

Aug 2021 – Aug 2022

Muddy River Watergoat Cleanup Volunteer

Boston, MA

- Assist in cleanup of the Boston Muddy River, including pulling in and raking litter out from the river watergoat.

National Honor Society

Aug 2018 – June 2021

Chapter President

Miami, FL

- Devise, recommend, and participate in community service opportunities in the Miami area, including charity runs, clean-ups, donation drives, and more.

Key Club

Sep 2014 – June 2021

President, Recipient of Regional Teamwork Award (2019)

Miami, FL

- Implemented donation drives for Lotus House Women's Shelter and Camillus House Miami. Introduced a service project making and donating dog toys from old shirts (ongoing at my current and previous schools).

Guns Down Books Up Peace March

Feb 2019

Co-organizer

Miami, FL

- Organize book giveaway for one of the communities most heavily impacted by gun violence in South FL.

TECHNICAL SKILLS

Computer Languages: Python, Rust, C++, Java, Bash, HTML/CSS/JavaScript, TypeScript, LaTeX, Max/MSP, Julia

Developer Tools: QGIS, PyQGIS, ArcGIS, OpenStreetMap (OSM), Tableau, Docker, AWS/GCP/Azure, GitHub, Jupyter, Slurm, VSCode, GPT/Prompt Engineering, Bitbucket, PyCharm, MongoDB, React, Express, Node.js, Next.js

Creative Tools: Adobe Photoshop, Premiere Pro, Lightroom, Illustrator, Fresco, DaVinci Resolve, Blender, Logic Pro, Audacity, Reaper, Canva, OBS Studio, MuseScore, Sibelius, Rekordbox, Djay, MS Office Suite

Foreign Languages: Spanish (Fluent), Portuguese (Basic)

AWARDS AND ACHIEVEMENTS

- *MIT Climate and Sustainability Consortium Scholar:* Advanced interdisciplinary research program, 2023 – 2025.
- *Dr Robbin Chapman Excellence through Adversity Award:* Persistence in advancing diversity/inclusion at MIT, 2024.
- *MIT Office of Minority Education 2022 – 2023 Distinguished Peer in Public Service.*
- *MIT Emerson/Harris Program (E/HP) for Private Study:* Scholar in Jazz and Classical Voice, 2022 – 2024.
- *Point Foundation Flagship Scholar:* LGBTQ+ empowerment through education and leadership, 2021 – Present.
- *Miami Ortega Foundation Scholar:* For academic prowess and commitment to higher education, 2021 – Present.
- *Hispanic Scholarship Fund Scholar Award:* 2021, 2022, 2023, 2024.
- *National YoungArts Winner in Spoken Word:* 2020, 2021.
- *Hispanic Heritage Foundation 2021 Youth Awards:* Social Justice Silver Medallion Recipient.
- *2021 Coca-Cola Scholars Semifinalist.*
- *2020 Columbia Engineering Experience:* Selective STEM intensive. 2wk interactive content from Columbia faculty.
- *2020 National Merit Scholarship Program:* National Merit Commended Student.
- *2020 National Hispanic & African & Indigenous Recognition Program Winner.*
- *2020 Hispanic Scholarship Fund Youth Leadership Institute (HSF Scholar).*
- *AP Scholar with Distinction Award.*

ARTS

Music (Voice, Instrumental, Composition)

MIT Vocal Jazz Ensemble, Chamber Chorus & Concert Choir, Senegalese Drum Ensemble, Laptop Ensemble, E/HP

- Trained classical singer (choral and solo vocal performance) since elementary school. Assist peers with music.

Lens-Based Media

Infinite Fashion Magazine Spread Lead, Creative Director, Photographer, Model — MIT Film & Video Production Club

- Created an experimental video and performance art installation series on my experiences as a trans person of color, incorporating narratives and iconography from my many communities' confrontations with harsh binaries.

Literary Arts

Chief Editor of MIT's (Rune) and NWSA's (Paloma) Literary & Arts Magazines, NEHS @ NWSA President

- Lead public readings and magazine development meetings. Orchestrated the shift of NWSA's magazine online.
- Lead National English Honor Society (NEHS) meetings. Delegate subcommittee projects. Implemented peer essay tutoring program during my fully virtual senior year.

KEY COURSES TAKEN

- **Urban Studies:** Globalization and its Discontents: Consuming Latin America — Climate & Sustainability Undergraduate Advanced Research (TA) — Undergraduate Planning Seminar — Intro to Urban Design & Development — Making Public Policy — Intro to Housing, Community, & Economic Development.
- **Urban Science:** Crowd Sourced City: Civic Tech Prototyping (Data Activism) — Spatial Analysis & GIS Lab.
- **Computer Science (CS) & Applications:** Digital and Computational Photography — Advances in Computer Vision — Machine Learning — Web Lab: Programming Competition — Battlecode Programming Competition — UPOP Engineering Practice — Linear Algebra & Optimization — Algorithms — Discrete Math & Proof for CS — Fundamentals of Programming — Computational Thinking & Data Science — CS Programming in Python.
- **Social Justice:** HIV/AIDS in American Culture — Black Matters: Introduction to Black Studies — Reparations for Slavery & Colonization: Contemporary Movements for Justice — Brazil: Race, Place, & Modernity in the Americas — Crime, Punishment & Policing in an Unequal America (Harvard Law School) — How to Change the World: Experiences from Social Entrepreneurs.