

Ari Peró

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EDUCATION

Massachusetts Institute of Technology (MIT)

Cambridge, MA

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

Expected May 2025

- **GPA:** 5.0/5.0 in-major, 4.9/5.0 overall

New World School of the Arts

Miami, FL

- **GPA:** 4.0/4.0, 5.12 weighted | Rank: #1 of 113 | *Classical (operatic), jazz voice magnet program.*

Jun 2021

WORK EXPERIENCE

MIT Senseable City Lab

Sep 2024 – Present

Research Scientist for Urban Innovation & Tree Health Monitoring

Cambridge, MA

- Develop deep learning models for segmentation and analysis of urban tree imagery. Extract tree health metrics, such as NDVI and canopy temperature depression, from thermal and multispectral image data to support cities in enhancing urban green spaces, improving public health, and mitigating heat island effects globally.
- Collaborate on novel approaches for autonomous urban forest monitoring, offering scalable solutions for cities to integrate data-driven environmental management into urban planning strategies.

Amazon Project Kuiper

Jun 2024 – Aug 2024

Embedded Software Development Engineer Intern

Seattle/Redmond, WA

- Further Kuiper's mission of expanding global broadband access by building tools for satellite communication.
- Boosted developer productivity by 15-20% and reduced codebase size by ~25% by designing a satellite gateway command-line interface. Implemented secure satellite bootloader verification features in Rust/C++ to strengthen system resilience—a vital step toward bridging the digital divide and promoting ethical international development.

MIT Computer Science and Artificial Intelligence Laboratory (CSAIL)

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 OpenCV, PyTorch, TensorFlow, and Pandas to optimize predictive accuracy. Employ CUDA to accelerate processing of diverse, long-tailed species distributions. Independently troubleshoot challenges like class imbalance, noise, and artifacts in ecological data. Tailor Slurm and Bash submission scripts to maximize resource efficiency. Optimize workflows to handle distributed data processing on high-performance computing systems in a Unix/Linux environment. Manage version control with Git. Deploy models on Azure/GCP for scalable cloud operation.
- Extract insights to inform conservation policy, improve biodiversity monitoring strategies, and balance data sovereignty with technological efficiency.
- Prepared a position paper for the 41st International Conference on Machine Learning, urging tech empowerment.

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.
- Implemented secure data pipelines to process user inputs for food post creation and account association by designing efficient schemas and database queries for storing and retrieving large volumes of data.
- **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

- Contributed to a group venture of developing an interactive dashboard, using Tableau, to visualize abortion fund data for IWR foundation; creating an ArcGIS StoryMap showing geographic distribution of IWR's services across Native territories; designing visualizations to demonstrate urgent demand for abortion care and IWR's capacity to serve clients; and implementing 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. Aimed to inform more equitable policing practices and resource allocation strategies.

LEADERSHIP

MIT Climate and Sustainability Consortium (MCSC) Aug 2024 – Present
Teaching Assistant, MCSC Scholar (Advanced year-long interdisciplinary research program) Cambridge, MA

- Provide instruction on effective research techniques, e.g., problem selection, literature review, and robust design.

Active Community Engagement: MIT Pre-Orientation Program Dec 2022 – Present
Program Coordinator (Priscilla King Gray Center for Public Service) Cambridge, MA

- Design and facilitate interactive social justice workshops, lead cross-functional counselor training, and propel collaborative service ventures with local non-profits. Introduce first-years to Boston via volunteer placements.

“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

- Advocate for 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 *U.S. Region 7 (2020 – 2022), SHPE-MIT* since Sep 2022

- Develop the professional and academic skills of members by offering internships, networking, and mentorship, 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.
- Speaker at the 2019 Young Leaders Summit as representative for GenCLEO: Youth Empowerment Movement.

GENERAL SERVICE (SELECTED)

Whitelock Community Garden & Farm Stand

May 2022 – Aug 2022

Farmhand & Food Stand 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.

Community Servings

Aug 2021 – Oct 2024

Kitchen Aide

Boston, MA

About Fresh

Aug 2021 – Sep 2023

Fresh Truck Aide

Boston, MA

- Bag and restock items on the “Fresh Truck” (grocery food truck) and assist in clean up at the end of the market.

Muddy Water Initiative

Aug 2021 – Sep 2023

Muddy River Watergoat & Litter Cleanup Volunteer

Boston, MA

Educational Studies Program (ESP) @ MIT

Aug 2021 – Jul 2022

General volunteer, Splash volunteer

Cambridge, MA

- Oversee MIT’s largest learning event: Splash (a weekend of classes for high schoolers, taught by MIT students).
- Direct lost students, supervise virtual classrooms, resolve technical issues, and manage food order logistics.

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, Git, 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: English (Native), Spanish (Native), Portuguese (Basic)

AWARDS AND ACHIEVEMENTS (SELECTED)

- *MIT Climate and Sustainability Consortium Scholar:* Advanced interdisciplinary research program 2023 – 2025
- *Dr Robbin Chapman Excellence through Adversity Award:* Persistence in advancing diversity/inclusion 2024
- *MIT Emerson/Harris Program (E/HP) for Private Study:* Scholar in Jazz and Classical Voice 2022 – 2024
- *MIT Office of Minority Education Distinguished Peer in Public Service* 2022 – 2023
- *Point Foundation Flagship Scholar:* LGBTQ+ empowerment through education and leadership 2021 – Present
- *Miami Ortega Foundation Scholar:* 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 Youth Awards:* Social Justice Silver Medallion 2021
- *National Merit Scholarship Program:* National Merit Commended Student 2020
- *National Hispanic & African & Indigenous Recognition Program Winner* 2020

KEY COURSES TAKEN

- **Urban Studies:** Globalization & 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 —
Enrolled: Land Use Law & Politics: Race, Place, & Law — Political Misinformation in the Age of Social Media.
- **Urban Science:** Crowd Sourced City: Civic Tech Prototyping (Data Activism) — Spatial Analysis & GIS Lab —
Enrolled: Environmental Justice, Science, & Technology.
- **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.