Sara Vargas

New York, NY 10013 • saravargasmar@gmail.com • +1 332 400 6110
linkedin.com • github.com

Education

New York University - Courant Institute of Mathematics New York, NY
MSc in Computer Science May 2027

New York University - Courant Institute of Mathematics New York, NY
B.A. Honors Economics and Computer Science, Minor in Mathematics May 2025

- **Relevant Coursework:** Deep Learning, Algorithmic Problem Solving, Fundamentals of Machine Learning, Linear Algebra, Econometrics, Applied Internet Technology, Geometric Modeling
- **Awards:** Dean's Undergraduate Research Fund Grant, The College of Arts and Sciences Service Grant

Skills & Interests

- **Programming Languages:** Python, R, Java, JavaScript, C, Bash
- **Data Analysis:** NumPy, Matplotlib, Pytorch
- **Web/APIs:** React, RESTful JSON Web APIs, Node.js

Experience

Octavate New York, NY
Software Developer May 2025 – Present

- Designed and trained a CNN in **PyTorch** to evaluate and rank music tracks based on audio features.
- Built a Python-based **web scraper** integrating RESTful APIs to automatically update the company's artist database.
- Developed interactive **data visualizations** in p5.js to present company performance and artist metrics.

New York University New York, NY
Research – Undergraduate Thesis Nov 2024 – May 2025

- Designed and executed an econometric study examining the heterogeneous effects of paid parental leave on maternal labor force participation, using national panel datasets.
- Implemented linear and logistic regression models in R; performed hypothesis testing and robustness checks across demographic subgroups.
- Discovered that mothers of color and unmarried mothers experienced a 5–20% greater increase in short-term labor force attachment with substantial increase in employment post-policy, relative to other groups.
- Created reproducible analysis pipeline with tidyverse and ggplot2 (published codebase on GitHub).

Emerging Leaders in Technology and Engineering (ELiTE) New York, NY
Education Fellow Sep 2023 – Sep 2024

- Instructed weekly 5-hour sessions on Python programming for high school students from underrepresented backgrounds.
- Developed pedagogical strategies to enhance curriculum comprehension using p5 library to emphasize build visual creative portfolios.

NYU Gallatin New York, NY
Student Technician Jan 2024 – Sep 2024

- Supported faculty and staff with AV system troubleshooting and tech support.
- Managed hardware/software requests and collaborated with IT team on tech enhancement projects.

Barcelona Supercomputing Center Barcelona, Spain
Student Researcher Jan 2021 – Jun 2021

- Built Python-based models for large-scale computational analysis.
- Leveraged Jupyter Notebooks and HPC systems to optimize workflows.

Leadership & Activities

Research+ Fellow at NYU CAS May 2024 – Sep 2024

- Selected for a competitive summer research fellowship in computational research at NYU.

NYU Undergraduate Research Conference Sep 2024 – May 2025

- Presenting undergraduate thesis on paid parental leave policy impacts.

Interests: Classical music training in harp and singing