Melody Quỳnh Nguyen
Pace University, New York City
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Pforzheimer Honors College
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Education

Pace University, New York, NY

- Bachelor of Arts, Computer Science, Minor**:** Business
- Pforzheimer Honors College Scholar
- Expected May 2026, GPA: 3.81

Honors Thesis:

Digital Pollution: Understanding the Energy Costs of Large Language Models

- Examines LLM electricity/water usage, carbon impact, and user behavior patterns
- Combines survey research, technical energy benchmarks, and expert interviews
- Supported by Honors College Research Grant (2024–2026)

Research Experience

Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory

Engineering Intern, Autonomous Experimentation & X-ray Diffraction
2025–Present

- Developed Python automation driving multi-resolution XRD scanning logic.
- Created ML-assisted algorithms for peak detection, shrinking/growing peak classification, and peak shifting.
- Assisted in backend data acquisition tooling for high-temperature phase transition experiments.
- Collaborated with beamline scientists (Uta Ruett, Kevin Stone, Anna Wanhala) to test algorithms in-lab.

SLAC National Accelerator Laboratory, Applied Energy Division (GISMo)

Science Undergraduate Laboratory Intern (DOE SULI)
2024

- Analyzed 60+ NOAA & NREL meteorological datasets to quantify PV performance during extreme heatwaves.
- Built ETL workflows and interactive weather-impact visualizations using Python + Marimo.

- Supported the REGROW project's intelligent planning models for renewable-backed grids.
- Developed spatial analyses (choropleth maps, anomaly detection) for solar, temperature, and wind data.

SLAC National Accelerator Laboratory, Grid Integration Systems & Mobility Group
Grid Integration Systems & Mobility Group
2023 - 2024

- Revamped the Grid Resilience Intelligence Platform (GRIP) website using GitHub, HTML, CSS.
- Redesigned the SLAC Battery Center website (Drupal) to align with DOE publication standards.
- Supported the Arras Energy simulation tool (Linux Foundation) via Jekyll + GitHub code management.
- Conducted market and consumer behavior research for transactive energy systems.

Science Accelerating Girls' Engagement (SAGE), SLAC
Intern, STEM Education & Energy Systems Outreach
2023 – 2024

- Produced the Transactive Energy Service System (TESS) consumer playbook from a 13-page whitepaper.
- Led a leadership cohort of 15 student founders working on SDG-aligned initiatives.
- Delivered programming on ethical leadership, fundraising, and digital platform development.
- Introduced Nobel Peace Prize Laureate Malala Yousafzai at the 2023 fellowship graduation.
- Developed open-source learning resources supporting access to STEM education.

Technical Publications & Writing

Technical Writing

- Marimo in a Classroom: Reproducible Python for Students (2024)
- Heatwave Impacts on Solar PV Performance (2024, SLAC)
- SSRL Internal Documentation: *Autonomous Peak-Scanning Algorithms* (2025)

Organizational Publications

- J. Cordova, M. Bolton, A. Astrike, K. DeBarger-Gestring, E. Huber, C. Ioffe & M. Nguyen. (2025) "Youth and Disarmament Education." *First Committee Monitor*, 23(4), pp. 53-54.

Fellowships, Presentations & Leadership

United Nations Academic Impact — Millennium Fellowship
Campus Director & Emerging Technologist
2023

- Reactive Notebooks for Reproducible Science, Marimo Stanford Showcase (2024)
- Autonomous Experimentation for XRD, SSRL Intern Symposium (2025)
- Digital Pollution: Why AI Needs Sustainable Design, Honors Conference (upcoming 2026)
- PV Systems During Heatwaves: A Data-Driven Analysis, SLAC Summer Symposium (2024)
- *STEM Access for Women in Vietnam*, UNAI Millennium Fellowship Showcase (2023)

Awards & Grants

- National Science Foundation Travel Grant, SuperComputing24
- Pace University, Honors College Grant (2022–2026)
- Dean's List, First Honors
- Pforzheimer Honors College Scholarship
- Principal's Leadership Award, Santa Teresa High School

Professional Memberships

- Institute of Operations, Research and Management Sciences (INFORMS)
- United Nations Academic Impact (UNAI)
- Google Developers Groups, Marketing Lead
- American Marketing Association
- Donofrio Leadership Program for STEM Professionals
- New York Road Runners

Skills

- Programming: Python, SQL, Java, R, HTML/CSS, JavaScript (basic), Jekyll, Drupal
- Data Science: Pandas, NumPy, SciPy, Matplotlib, Seaborn, GeoPandas
- Machine Learning: scikit-learn, ML logic design for autonomous scans
- Tools: Git/GitHub, Marimo, VS Code, Tableau, Figma, Adobe Creative Suite, Canva
- Research Skills: Data cleaning, ETL, scientific visualization, algorithm design, technical writing
- Special Interests: Energy systems, AI sustainability, autonomous scientific experiments, UI/UX for research tools