Margaux Vasilescu

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Education

Barnard College of Columbia University, BS in Computer Science, BS in Philosophy — Sept 2024 - May 2028

- GPA: 3.52/4.0
- **Coursework:** Data Structures, Linear Algebra and Probability, Aristotle, Intro to Economics, Intro to Java, Advanced Programming, Kant, Ethics, Fundamentals of Computer Systems, Epistemology, Intro to Logic, Stars Galaxies and Cosmology, Discrete Mathematics, Artificial Intelligence, Natural Language Processing, Political Philosophy

The Bronx High School of Science — Sept 2021 - June 2024

Eleanor Roosevelt High School — Sept 2020 - June 2021

Projects

CloudBrew — iOS Weather App, Sutton Apps LLC – suttonapps.com/cloudbrew — *Aug 2026*

- Independently designed, built, and shipped a native iOS weather app to the App Store, owning the full product lifecycle from concept through release.
- Conceived and executed a "weather you can act on" product vision, translating raw forecast data into personalized guidance on clothing, gear, and daily activity.
- Built with Swift and SwiftUI, integrating Apple's WeatherKit and CoreLocation for real-time, location-aware conditions and WidgetKit for at-a-glance home-screen widgets.
- Managed App Store submission, provisioning, and entitlements, navigating Apple's full review and release process. Version 1 now available for download on the App Store.
- Actively developing version 2, expanding the feature set, refining the user experience, and resolving issues based on real-world usage.

Experience

Student Researcher, Shen Lab – New York, NY — May 2022 – Aug 2024

- Trained a machine learning model to improve the prediction of the effects of missense variants - genetic changes where a single nucleotide alters an amino acid in a protein
- Demonstrated that training gMVP with output from a Transformer model applied to protein sequence data and MSAs increases its efficiency.
- Introduced a new mathematical framework and algorithm that allowed attention weights to be visualized in three dimensions rather than prior visualizations in 1D or 2D

Study Abroad, DIS – Copenhagen, Denmark — Summer 2025

- Attended a 3 week course on Artificial Neural Networks and Deep Learning
- Learned about Logistic Regression and Feed Forward Neural Networks, Gradient Descent, Back Propagation, Overfitting, Regularization, Keras, CNNS, Transfer Learning, RNNs, Latent Space, Generative Models
- Developed a computer vision pipeline to identify plant diseases from leaf images using convolution neural networks and transfer learning. Utilized the PlantVillage dataset from Kaggle and trained a DenseNet121 model, achieving high classification accuracy on multiclass disease labels. Applied data augmentation and regularization techniques to improve generalization. Explored model performance with and without pretrained weights, demonstrating the impact of feature extraction in deep networks for agricultural diagnostics.
- Published a report of our project on Medium: https://medium.com/@mv2922/plant-disease-detection-21a05d3761a2

Secretary, Columbia University Club Tennis – New York, NY 2025-2026

- Appointed member of the Columbia University Club Tennis executive board
- In charge with correspondence of the club between members, school administration, and external affairs.
- Organizes and manages club tournaments both locally and nationally.
- Attends national tournaments regularly.

Intern, Hospitality Committee for United Nations Delegates (HCUND) – New York, NY Summers 2023-2024

- Revamped and updated the HCUND website to help attract more outreach and improve user accessibility. Created a proposal and pitched to the Advisory Committee a new WordPress website.
- Helped digitalized contact records of United Nations embassies in New York.
- Organized various activities and outings for the spouses of ambassadors in New York.

Boy Scouts of America, Lake Erie Council 2022-2023

- Created a Salesforce Application for the Boy Scouts of America Lake Erie Council.
- Led a volunteer project to build an inventory application for the Lake Erie Council's Nathan L. Dauby Scout Museum.
- Learned to capture business requirements, design and document a solution, learn Salesforce, build and test the solution, document the solution, and lastly present the solution.

US Open Ball Person, USTA – New York, NY 2023-Present

- Team collaboration that requires working in crews of 6 to help ensure uninterrupted match-flow.
- Experience with high performance under pressure while working semi-final and final matches.
- Requires skills such as situational awareness, rapid decision-making, and adaptability.
- Gained insights into the logistics of a world-class sporting event.
- Notable Matches: 2026 Men's Singles Final Crew, 2025 Women's Singles Final Crew

Model United Nations, Columbia – New York, NY 2025-2026

- Under Secretary General of Public Relations for CMUNCE XXV
- As a member of the Secretariat, I communicate with the advisors of over 50 high-schools from across the world who attend the annual conference.
- Required skills: communication, organization, collaboration, media relations
- I work and meet weekly with a team of around 25 students to organize and staff one of the country's premier Model UN conferences for high school students.

Programming

Languages: Python, Java, C, Swift

Technologies: MatLab, TensorFlow, VSCode, Jupyter Notebook, XCode, Linux, SwiftUI, WeatherKit

Languages

English, Spanish