

EDUCATION

New York University

B.Sc. Biology and Computer Science | GPA: 3.71 | Grad May 2026

Coursework: Data Structures, Algorithms, Data Science, Computer Networks, Discrete Mathematics, Computer Systems Organization, Biostatistics and Human Genetics

SKILLS

Technical Skills: Python, C++, C, R, Numpy, Pandas, Seaborn, Matplotlib, Pytorch, ML Flow, Microsoft Office

Biological Techniques: DNA Extraction, PCR, Gel Electrophoresis, Gateway Cloning, Quality Control, Principal Component Analysis (PCA), Linkage Disequilibrium (LD) Pruning

Research Skills: EDA, Statistical Data Analysis, Literature Review

Languages: English (Fluent), Urdu (Native), French (Elementary)

PERSONAL PROJECTS ([GitHub](#))

Health Insurance Cross-Sell Dashboard (Python) - Developed a predictive dashboard for health insurance cross-selling.

PolyCalc (C++) - Created a polynomial calculator for various mathematical operations.

Hotel Management System (C++) - Designed a system for managing hotel bookings and customer service.

Virtual File System (C++) - Simulated file operations like creation and deletion in a virtual environment.

YouTube Data Analysis App (HTML) - Built a Streamlit app for analyzing YouTube data with visualizations and Sweetviz reports.

PROFESSIONAL EXPERIENCE

Professor Amandine Cornille Lab

New York University

Research Assistant

Feb 2025 - present

- Working on a project investigating epigenetic variation in cultivated apple buds, focusing on DNA methylation changes under environmental stress.
- Currently performing high molecular weight DNA extractions from apple bud samples in preparation for Oxford Nanopore Technologies (ONT) long-read sequencing.
- Sequencing and subsequent bioinformatic analyses like methylation calling will follow.

International Centre for Genetic Engineering and Biotechnology (ICGEB) Summer Internship

Cape Town, South Africa

Research Assistant/Intern

June 2024 - Aug 2024

- Processed Oxford Nanopore sequencing data using Dorado for base calling and analysis
- Worked with GLABRA2 (GL2) transcription factor to assess its regulatory impact on Nit2 in planta.
- Cloned transcription factor candidates into plant expression vectors using Gateway cloning

Machine Learning Training at eBrain Lab

New York University

Research Assistant

April 2023 - April 2024

- Used PyTorch to train and test a model for retinal image segmentation based on the IPN-V2 method and OCTA-500 dataset.
- Worked on refining the model pipeline, including data preprocessing, augmentation, and evaluation metrics to improve segmentation accuracy.
- Gained experience in medical imaging, semantic segmentation, and handling large-scale biomedical datasets for real-world healthcare applications.

Workshop with Genetic Heritage Group

New York University

Computational Biology Intern

Sep 2023 - Dec 2023

- Applied advanced computational techniques, such as Principal Component Analysis (PCA), Linkage Disequilibrium (LD) pruning, and Admixture analysis, to large-scale genetic datasets.
- Developed and implemented data processing pipelines using Python and R to ensure rigorous Quality Control (QC) for genetic data, optimizing accuracy and reliability.

International Genetically Engineered Machine (iGEM)

New York University

NYU iGEM Science & Engineering Team

March 2023 - Nov 2023

- Worked on enhancing recombinant collagen for tissue engineering and regenerative medicine
- Used Ordinary Differential Equations (ODEs) to construct a detailed model for the genetic blueprint governing collagen synthesis.

LEADERSHIP EXPERIENCE

Global Student Council (GSC) Site Ambassador

NYU Paris (Study Away Semester)

NYU Student Government Assembly

Jan 2024 - May 2024

- Organized and led events that fostered community engagement and connected students to French culture
- Collaborated with NYU Paris administration and Student Government to enhance student experience through cultural and academic activities and trips

NYU Women's Cricket Team

NYU Abu Dhabi

Team Pioneer

Feb 2023 onwards

- Founded the NYU Abu Dhabi Women's Cricket Team, initiated the idea, recruited members and organized training sessions and practice matches