Rika Chan

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EDUCATION

Barnard College, Columbia University | New York, NY   **May 2026**

B.A. in Computational Biology

Relevant Courses: Computational Genomics, Natural Language Processing, Linear Algebra & Probability, RNA-seq analysis, Machine Learning for Functional Genomics, Deep Learning for Biomedical Signal Processing, Molecular Genetics, Advanced R in Biology, Microbial Genomics, Machine Learning for Statistical Genomics

RESEARCH & WORK EXPERIENCES

Mansfield Lab, Barnard College | Researcher | New York, NY   **Sep 2024 - Present**
- Analyzed large-scale biological data (20,000+ cells, 18,000+ genes) across early development stages, uncovering 20+ new signals linked to brown fat cell formation.
- Designed a custom workflow to track how cells develop over time, mapping their journey from early stem-like states to mature brown fat cells.
- Evaluated and integrated cutting-edge spatial biology technologies with AI methods to improve detection of where brown fat cells emerge in tissue.
- Synthesized key findings into valuable insights and presented findings at the Barnard College Summer Research Institute

Rabadan Lab, Columbia Irving Medical Center | Researcher | New York, NY   **Sep 2024 - Present**
- Built a machine learning framework to predict how influenza adapts to different hosts using advanced protein modeling.
- Applied AI techniques to identify key mutations and variants that distinguish viral strains.
- Achieved high prediction accuracy, showing the value of AI for understanding a specific subtype of influenza evolution.

Empirical Reasoning Center | Student Fellow | New York, NY   **Mar 2023 - Present**
- Mentored 50+ students across 10+ disciplines in advanced data analytics, quantitative reasoning, and statistical methodologies, enhancing their ability to design experiments, analyze data, and interpret results.
- Instructed students in R, Python, Stata, ArcGIS, and QGIS, creating tailored learning paths, interactive tutorials, and fostering peer-to-peer collaboration to strengthen technical proficiency and applied computational skills.
- Partnered with faculty and staff to develop campus-wide data support strategies, expanding access to statistical resources and promoting integration of data-driven analysis across the curriculum.

Uhlemann Lab, Columbia Irving Medical Center | Researcher | New York, NY   **Jan 2024 - Aug 2024**
- Analyzed whole-genome sequencing (WGS) data from 10+ liver transplant patients to investigate bacterial adaptation and evolution in immunocompromised hosts.
- Developed and executed custom scripts for quality control, species classification, and detection of mobile genetic elements, improving workflow efficiency and reproducibility.
- Synthesized genomic datasets into actionable insights with potential clinical relevance and presented findings at the Barnard College Summer Research Institute through data visualizations and oral presentation.

PROJECT EXPERIENCES

scViewer | Developer | New York, NY   **Summer 2025**
- Engineered support for .h5ad uploads up to 10GB with efficient memory management, enabling scalable single-cell data analysis.
- Built an interactive interface with integrated quality control, clustering, differential expression, and customizable visualizations to broaden accessibility of single-cell transcriptomics.

ArcCell | Developer | New York, NY   **Spring 2025**
- Developed an AI model to improve cell type identification, surpassing a leading benchmark tool and highlighting key genetic markers.
- Optimized data processing pipelines for large-scale single-cell datasets, ensuring faster and more reliable analysis across samples.

TECHNICAL SKILLS & LANGUAGES

Technical: Python, R, R Shiny, Bash, HTML/CSS, Rust, React, Swift, MS office suite